Contract MDA-908-83-C-1497

THE ORKAND CORPORATION

SILVER SPRING, MARYLAND

MANPOWER (TO INCLUDE WOMEN) AND MILITARY ESTABLISHMENTS IN THE MIDDLE EAST AND NORTH AFRICA

FINAL REPORT
18 April, 1984

Prepared for:

Defense Intelligence Agency
U.S. Department of Defense

THE ORKAND CORPORATION

April 18, 1984

Mr. David Goldman
Defense Intelligence Agency
DE-4
Washington, D.C. 20301

Re: Contract MDA908-83-C-1497
Manpower (to Include Women) and Military Establishments
in the Middle East and North Africa

Dear Mr. Goldman:

I am happy to send you the enclosed ten copies of The Orkand Corporation's final report on manpower and military establishments in the Middle East and North Africa, prepared for the DIA Area and Language Studies Program.

The supplementary data volume complements the manpower model discussion and country studies found in the main volume, and provides statistical information used in preparation of the study.

This final report represents the culmination of the efforts of our area specialists, and incorporates the comments and suggestions received from your area analysts in response to the two previously submitted drafts.

It has been our pleasure working with you on this project. Please contact us if we may be of service to you in the future.

Sincerely yours,

Thomas H. Johnson
Program Director and
Project Manager

Enclosure

THJ:jrl

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MDA908-C-1497

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CHAPTER I

INTRODUCTION

I. INTRODUCTION

The ongoing dispute between Israel and her neighbors, the dependency of Western states on Arab oil and the coming of age of the oil kingdoms, and the resurgence of Islamic fundamentalism have attached to the Middle East a preeminence among Third World areas of concern to U.S. policymakers. The juxtaposition there of religious, territorial and political tensions is only compounded by superimposing on the region the economic and strategic ambitions of the superpowers. It is in this context that those who serve the intelligence needs of decisionmakers have had to broaden their capabilities for analysis of the Middle East: its peoples, their societies, and the outlook for peace among them.

This study, commissioned by the Defense Intelligence Agency's Area and Language Studies Program, addresses a particular facet of security and military capabilities in the Middle East by examing the current and projected availability of military manpower in ten select countries:

Algeria	Jordan
Egypt	Libya
Iran	Morocco
Iraq	Saudi Arabia
Israel	Syria

The importance of manpower issues to the countries of the Middle East cannot be underestimated. For example, in Saudi Arabia, the available trained manpower is limited, and will continue to be the major obstacle to the effective integration of sophisticated weapons into the Armed Forces. This problem is exacerbated by the underdeveloped nature of the country's infrastructure and competition with the private sector for scarce personnel. Israel, on the other hand, has met its extraordinary security requirements with a small but rapidly mobilizable manpower pool.

Our approach to the study of Middle Eastern manpower is multidisciplinary and integrates the complementary advantages and perspectives of quantitative and more traditional analytic techniques, to better assess both the statistical and the less-quantifiable factors germain to the evolution of a skilled military-eligible labor pool. Our strategy in so doing has been three-fold and rests on the application of:

- Statistical analysis and modeling techniques, to assimilate, interrelate and process hard data for the generation of numerical manpower projections;
- Socio-political analysis and the development of case studies, to place into country-specific and historical, societal, economic and political contexts the data supporting the model; and

- Extrapolation and scenario analysis, to illuminate the meaning of the projection figures by presenting them alongside illustrative hypothetical conditions under which manpower levels and requirements might be expected to alter.

The integrated application of these mutually-supportive methodologies has alleviated the bias and narrow focus at risk in the use of a single technical approach, and has facilitated the development of more broadly-based conclusions. Of special significance to intelligence analysts, the simultaneous development of the model, assembly of a manpower data base, and researching of country studies have been mutually reinforcing tasks, all serving to aid in the design, testing, and final configuration of the manpower forecasting model.

The design and execution of the study have been guided by the objectives stated above. This final report seeks to:

- Describe an enhanced military manpower projection model, detailing the interrelationships among and between those key variables which influence the available manpower pool;

- Develop and compile, using the framework established in the model, systematic country studies focusing on military manpower issues and based on the best empirical data available from open-source material;

- Identify and collect data for the period 1960 through 1982 on key determinants of available manpower; and

- Project from the above data high and low estimates of available military manpower (male and female) through 2003.

In so doing, the report necessarily treats a wide variety of social, economic and political topics in describing the colorations and configurations of the labor pools from which the armed forces may draw, and the subsequent recruitment, allocation, training and retention if these troops.

This volume first describes a systematic model developed for analyzing and assessing the impact of selected manpower determinants on the supply of military personnel in the ten countries under study. This discussion is built upon a critique of the existing DIA Middle Eastern Manpower Model previously submitted under separate cover, and it outlines a deterministic model of the manpower availability process, describing its key components: each is related to the dependent variable, military personnel resources. This section additionally features exhibits illustrating the model and its component sectors.

Narrative case studies of each of the ten countries appear in Chapter III, where quantitative and qualitative manpower-related factors are discussed topically in seven sectors, roughly correlating to the definitions of model sectors appearing in the previous chapter. Attention has been given here to placing the collected data into the context of military personnel and, more generally, national security policies. The objective in researching and arranging this chapter has been to assemble the factual material essential for the operation and understanding of a working manpower projection model.

Following a statement of general considerations, the data appearing in the individual country profiles are arranged under the headings: Government Policies, The Population Base, Civilian Human Capital Development Programs, National Human Resources, Civilian Versus Military Opportunities, Military Training, and Military Manpower Resources.

These country studies are followed by numerical projections of available working age, military-eligible manpower and a display of likely circumstances in which military manpower levels and requirements might be expected to rise and fall. These scenario-like circumstances are included for illustrative purposes, and to provide a backdrop for the numerical projections offered in the table.

Conclusions are drawn in Chapter V in the form of a narrative presentation of identifiable manpower trends, linking the model dynamics with the interaction of the determinants of available human capital discussed in the country studies. Outstanding data is highlighted and an available manpower projection table appears here, more fully developed in the appended tables.

The accompanying data supplement volume contains data used in the preparation of the final report, and is intended to serve as a preliminary data base from which DIA analysts can expand and enhance the existing manpower model.

CHAPTER II

A MODEL OF MILITARY MANPOWER TRENDS

II. A MODEL OF MILITARY MANPOWER TRENDS

INTRODUCTION

The numbers and quality of military personnel are basic information required for many production taskings. Because the indicators may be used for description, as in order of battle, or prediction, as in preparedness analyses, analysts require both current and projected trends. The model presented in this chapter can help the analyst meet these two types of requirements.

The model outlines five key determinants of military manpower in the Middle East: the population base, human capital development, government defense-related policies, foreign assistance and civilian opportunities. Each of these sectors of the larger model subsumes separate combinations of variables and relationships. The interrelationships among these determinants represent the simplified, fundamental factors underlying manpower trends. By trading the texture and detail of a particular country for a more general, widely-applicable rubric for understanding manpower trends, the model permits timely, effective, and efficient analysis. In addition to these simplified relationships, in-depth consideration of the particular country of interest, such as that presented for the ten countries in Chapter III, complements the model's estimates. The following sections of this chapter describe the model's framework, its advantages and limitations, and then proceed to a detailed discussion of the model components.

MODEL METHODOLOGY

The military manpower model uses a system dynamics methodology. The methodology examines the key flows of resources (money, men, material, goods, and services) and information which characterize social systems. There are two major components used in analyzing the flows. The first concept is termed a level. Levels are measures, counts, or descriptions of the flows evaluated at a particular point in time. In other words, a "snap-shot" is taken of the accumulated flow of resources.

The second focus of this methodology is upon the rate of change of the levels over time. The rates of change describe the direction, type, and speed of change. Auxiliary variables help the analyst understand why there is a particular pattern for a rate. Generally, auxiliary variables are the determinants of a particular rate of change for a level of the flow.

The rates of change of levels provide the framework for describing a system. Using this language, military manpower (levels) changes over time (rate) are cast as a function of other levels and rates for a population's maturation, education, government response, foreign assistance, and given non-military sector opportunities. Exhibit I illustrates this broad overview of the system. In this exhibit, boxes represent the major

determinants (sectors) of the model of military manpower trends. Arrows represent the major relationships among the sectors. The exhibit presents a composite view of the factors in the model. This overview is divided into its analytical parts : Exhibits II through VII: a table follows each of these exhibits, referencing applicable data in the text and in the Data Supplement Volume.

Exhibits II through VII depict the detail within the sectors, using system dynamics symbols to represent the major relationships driving manpower capability. The symbols represent the following characteristics:

- ▭ = levels (quantity of variables at a point in time)
- ⧖ = rates (speed, direction, and type of change)
- ○ = auxiliaries (characteristics affecting rates)
- ⟶ = flows of actual resources, e.g., men, money, goods
- ⇢ = flows of information
- ⬡ = exogenous sectors.

As an example of how these symbols fit together, consider the increase in the number of young people to age 20 when military service is often required in Middle Eastern nations. The relationships presented in Exhibit II describe the number of people in an age group (in this case, 20-24) and the rate at which the increase in this age cohort occurs. That rate is in turn influenced by preceding levels and rates. The death rate and the maturation rate associated with the previous age group are of direct importance. The level of people in that age cohort affects its death rate, too: there will be a characteristic death rate and loss of life associated with that particular age group. Finally, other characteristics may affect the rates (such as nutrition, health care, urbanization, cultural norms and other socio-economic variables).

The symbols help describe the types of relationships among variables without stating them as mathematical formulations. The mathematical relationships represented by the graphical form can be generated, however, and initial information about relationships and levels can be processed through simulation to develop estimates of future trends in the levels of the flows.

ADVANTAGES AND LIMITATIONS FOR THE ANALYST

Before turning to a more comprehensive description of the model, several advantages and limitations of modeling and the system dynamics methodology should be noted. As a general advantage for the analyst, modeling provides an efficient, systematic procedure for comparing patterns in different countries. Modeling forces the individual to recognize assumptions and focus upon the key factors necessary for analysis.

The system dynamics methodology has its own advantages, as well. The method is dynamic and predictive, using simulation techniques for estimating

future trends. System dynamics models can incorporate "soft" data for variables, providing the analyst with more flexibility to address questions for which actual statistical measures do not exist and to make the most effective use of available information, including expert judgments. This advantage is particularly useful in a study of the quality of military manpower; variables such as loyalty, organizational effectiveness, and leadership quality may be incorporated into the analysis.

The ease with which sections of the model can be modified is an additional major advantage of the technique. This flexibility means that the analyst can alter particular relationships and rates to evaluate their impact upon other parts of the model. Among the many types of questions that could be evaluated with this model are the longer term effects that the war of attrition between Iran and Iraq will have upon their military capabilities; the effects of a declining population growth rate on the pool of potential members of the Israeli military; and the relationship between weapons life cycles and personnel. The model permits the analyst to examine particular changes and possible scenarios.

The system dynamics methodology provides a flexible instrument for examining a set of questions by systematically evaluating the simplified relationships in the model. The limitations of the method run counter to some of these advantages. The model is a simplification of reality. It provides the analyst with trends and patterns, not detailed description nor point estimation. Nor can it account for crisis situations, massive changes in relationships, nor new variables affecting the development of military manpower without modifying the model. Nonetheless, such dynamics can easily be incorporated in changes of rates in the model. In addition, the flexibility of the model methodology permits linkage to other models or segments.

MODEL DESCRIPTION

As outlined in Exhibits I through VII, the estimation of military manpower resources includes more than numbers of personnel. Qualitative aspects of leadership, loyalty, and skills are key for considering military personnel as a capability or resource. More specifically, military human capital resources include the following characteristics:

- number of people available presently and in sufficiently stable supply in the future;
- skills of people; their capabilities to complete tasks necessary to fulfill military objectives; and
- effectiveness of organization; the quality of leadership, resource availability, productive performance, and cohesiveness.

Estimates of military manpower changes rely upon national processes and relationships influencing these characteristics. The model summarizes the determinants of the quantitative and qualitative measures of human resources into five categories:

- the population base;
- human capital development;
- government policies (defense-related);
- foreign assistance; and
- civilian sector opportunities.

The following descriptions examine the sectors in more detail, with some comments about the Middle Eastern cases in this project.

Population Base Sector

The population base identifies the total number of people in the basic national manpower pool. Two major types of characteristics describe this aggregate: demographic growth rates and socio-economic variables. As illustrated by the interrelationships in the sectoral model, Exhibit II, the major demographic rates describing population growth are birth rates, maturation rates, and death rates. These rates are a function of the age structure of the society, particularly the number of women of child bearing age, fertility, and characteristics associated with wider societal resources and relationships, like cultural values and quality of life. The differences in these basic variables in Middle East nations is quite wide-ranging, as described in the country discussions and projections. Even when they have similar total populations, the age structure, average life expectancy and thus the population growth rate, differ considerably. Contrast Israel's expected average annual population growth of 1.5% in the next 20 years with that of Jordan, at 3.7%. These differences will have major impacts upon military personnel resources.

Human Capital Development Sector

Education and training are key determinants of the quality of military manpower. Human capital development, illustrated in Exhibit III, includes two major dimensions: the numbers completing different grade levels and types of education. This flow of people relies upon both values and resources available from the government and through foreign assistance.

Common descriptions of the educational system rely upon estimates of the enrollment of students in various grade levels and functional specializations. There is considerable range in quality of Middle Eastern nations' advanced and/or technical education programs and in the proportion of school age children enrolled in either civilian or military educational programs. For example, the very limited or nonexistent technical training programs in Libya and Morocco contrast with the expertise developed by Egyptian and Israeli schools. The percent of students completing higher education varies in a similar fashion. These differences are compounded by the type of services and infrastructure that affect the quality of life in these countries and, ultimately, military human capital resources and effective performance of mission-related tasks. Lack of major services or infrastructure may affect

education and training directly (e.g., schools, libraries, translation). Infrastructural gaps, such as in communication or transportation systems, may affect education and training indirectly, although they would impact more drastically upon trained individuals' behavior in the civilian or military sectors.

Both civilian sector opportunities and military manpower development suffer without these human capital resources. Lacking a national capability, the countries must rely upon foreign sources for training, foreign professional or technical study by nationals, and related ties to external sources for aid, industrial and weapon system imports, and scientific and technical information. In some cases (e.g., Libya), the limited national technical and support infrastructure translates into heavy reliance upon a single supply source. Such assistance may become a major determinant of national defense-related policies by influencing the availability of budgetary resources and interpretations of international behaviors and security issues. This assistance affects the quality of personnel and feeds back upon human capital development.

Government Policies (Defense-Related) Sector

Military and civilian education programs and the existence of other support services are influenced by cultural or socioeconomic traditions and, further, by government budget allocations and substantive policies such as required military service. Government defense policies translate leaders' perceptions about internal and external threats into policies which affect the resources available to the military (or particular factions in the military). The sectoral model in Exhibit IV illustrates the trade-offs and priorities faced by government leaders.

Budgetary priorities reflect leadership perceptions of domestic development strategies, fears about internal strife, and preferences for foreign policies. Military priorities thus compete with other issues. Defense expenditures as a percent of GNP and of government expenditures give a rough indication of these major priorities. Within the military expenditures, expenditures for various functions such as personnel and training, construction and maintenance, and procurement of weapons systems illustrate a further ranking of priorities.

The evaluation of government defense-related policies would be incomplete without an indication of future priorities, related to perceived external threats and vital interests. Arab leaders' perceptions of future resources and interests have changed dramatically during the last several years. Israel remains the major enemy, but is no longer the sole concern of other Middle Eastern leaders. For example, influence by religious leaders, international economic problems, and shifts in regional balances of power are among the changing concerns described by Saudi and Egyptian leaders. Shifting security issues and national development goals influence expenditures and may affect other defense manpower policies such as the readiness status of reserve units, the minimum conscription age, or the role of women in the armed services (active combat support if not participant). These changes may be qualitative

rather than budgetary, yet motivation and ideals may be key for understanding both the attractiveness of military opportunities and military manpower effectiveness.

Foreign Assistance Sector

Middle East nations receive many forms of foreign assistance as illustrated in Exhibit V. Besides traditional bilateral monetary flows as technical or military grants or loans, Middle East nations receive loans from foreign banks or corporations, participate in regional development banks, and receive funds from international organizations. The reliance of individual nations upon particular sources of capital and, in particular, the proportion of their domestic national budgets which relies upon foreign sources of capital are key variables which would affect perceptions of vital interests, the available resources for civilian sector development, and military procurement and operations.

Monetary assistance represents one aspect of foreign influence upon military personnel development. Training and advice by foreign personnel in Middle East nations is perhaps more important in terms of the range of influence that can be wielded. Individuals trained by foreign personnel, either locally or in foreign countries, are indoctrinated into a mode of strategic and tactical operations based upon foreign weaponry and combat doctrine. These influences are critical in understanding and predicting future manpower capabilities including C^3I, logistics, equipment, and operations. The quite different tactical organization of Libya from that of Iran or Israel illustrates the deep influence of foreign assistance. Problems faced in maintaining weapons by the countries previously tied to particular donors (e.g., Iraq, Iran) are further illustrations of how the complicated processes of foreign assistance continue to affect manpower capabilities at later time points.

Civilian Sector Opportunities

The final factor has less direct impact upon military human capital resources. Rather, civilian sector opportunities are alternatives which attract certain individuals in each society given available military options, past education and the geographic distribution of opportunities and manpower. There are several issues that illustrate how civilian opportunities affect society, and, more specifically, military objectives. They range from the types of opportunities that may exist to the potential for individual gain in the civilian sector, as outlined in Exhibit VI.

At the most basic level, the Middle East nations vary considerably in their available civilian sector development. The level of economic development and current growth are good indicators of civilian sector opportunities. The exploitation of mineral or raw material resources (e.g., in Saudi Arabia, Libya) or the development of an agricultural or light manufacturing industry (in Israel) are civilian sector alternatives in the Middle East. Generally, economic growth and expansion increases employment opportunities in these countries. Further, civilian economic development may generate foreign exchange, provide resources for government leaders, or help the balance of payments. The opportunities affect wage scales and unemployment, increasing

or decreasing the available pool of personnel for the military sector. Other characteristics such as cultural perceptions of work may also affect civilian opportunities and the relative attractiveness of military service. Perceptions affect the willingness to perform certain tasks (e.g. to work with one's hands may be undignified to some) and, therefore, the quality of personnel available for military activities.

The availability of certain civilian sector opportunities is particularly important for Middle East nations' development and more specifically, for military manpower development. For example, sufficient civilian employment opportunities may not exist to accommodate the population of highly trained graduates. Further, government, industry, or university research expenditure may be considerably less than the level required to employ the labor pool. Considerable immigration and "the brain drain" may be the result of these national "shortfalls," as in the cases of Egypt and Syria. The longer term implications of these trends may be negative for continued development. On the other hand, some of these individuals may provide a more skilled labor pool for the military sector. When there is some perception that military personnel have access to scientific or technical resources, prestige, monetary rewards, and mobility, military human capital resources may increase in both numbers and the qualitative measures of organizational effectiveness, leadership, and performance.

Military Manpower Resources Sector

Many aspects of this sector have been described earlier. Nevertheless, some final comments will emphasize key aspects of the sector's dynamics which will support future estimation for the Middle East nations. First, the sector, as illustrated in Exhibit VII, includes both quantitative measures of available manpower and qualitative assessments of morale, mission, performance, and leadership. Middle Eastern nations' histories provide ample information for qualitative evaluations; of the nations examined, only the Saudis lack recent combat experience. Thus, key qualifiers of the number of personnel, such as combat readiness, tactical performance, or leadership quality, are illustrated in fairly recent combat experience.

Mission experience is a key concept affecting the quality of military human capital resources. As illustrated in Exhibit VII, education and training support the general skill level of the military personnel and their ability to fulfill government requirements. The existence of combat support, including technical officers in the medical corps or intelligence, varies considerably among Middle Eastern nations. The specialization of personnel, the distribution of personnel among ranks, and the skills which they may offer for effective mission performance provide additional information for judging personnel.

Finally, the evaluation of this sector's dynamics depends upon the complex inter-sectoral relationships summarized in the model. Military and civilian training of various segments of the population combined with the governments' defense-related policies and the relative attractiveness of military and civilian opportunities influence the number and qualifications of the military manpower pool. The other sectors also provide the background for understand-

ing how and why the armed services have a particular structure, organizational effectiveness for task performance related to stated missions, particular foreign and domestic policies, and, finally, whether the armed services tend to be politicized or factionalized which impacts upon government policies.

Conclusion

The model presented in Exhibit I provides an overview of the many complex relationships and processes affecting military manpower development. Each sector comprises a particular dynamic which is self-contained but has some impact upon the quantitative and qualitative evaluation of military human capital resources. The broad relationships among sectors describe the process of manpower development. Ultimately, particular characteristics can be linked between sectors, mapping the dynamic relationships and shifts. This further development would enhance the model's application for prediction and evaluation of "what-if" questions (sensitivity analysis).

Exhibit 1 MILITARY MANPOWER DEVELOPMENT MODEL

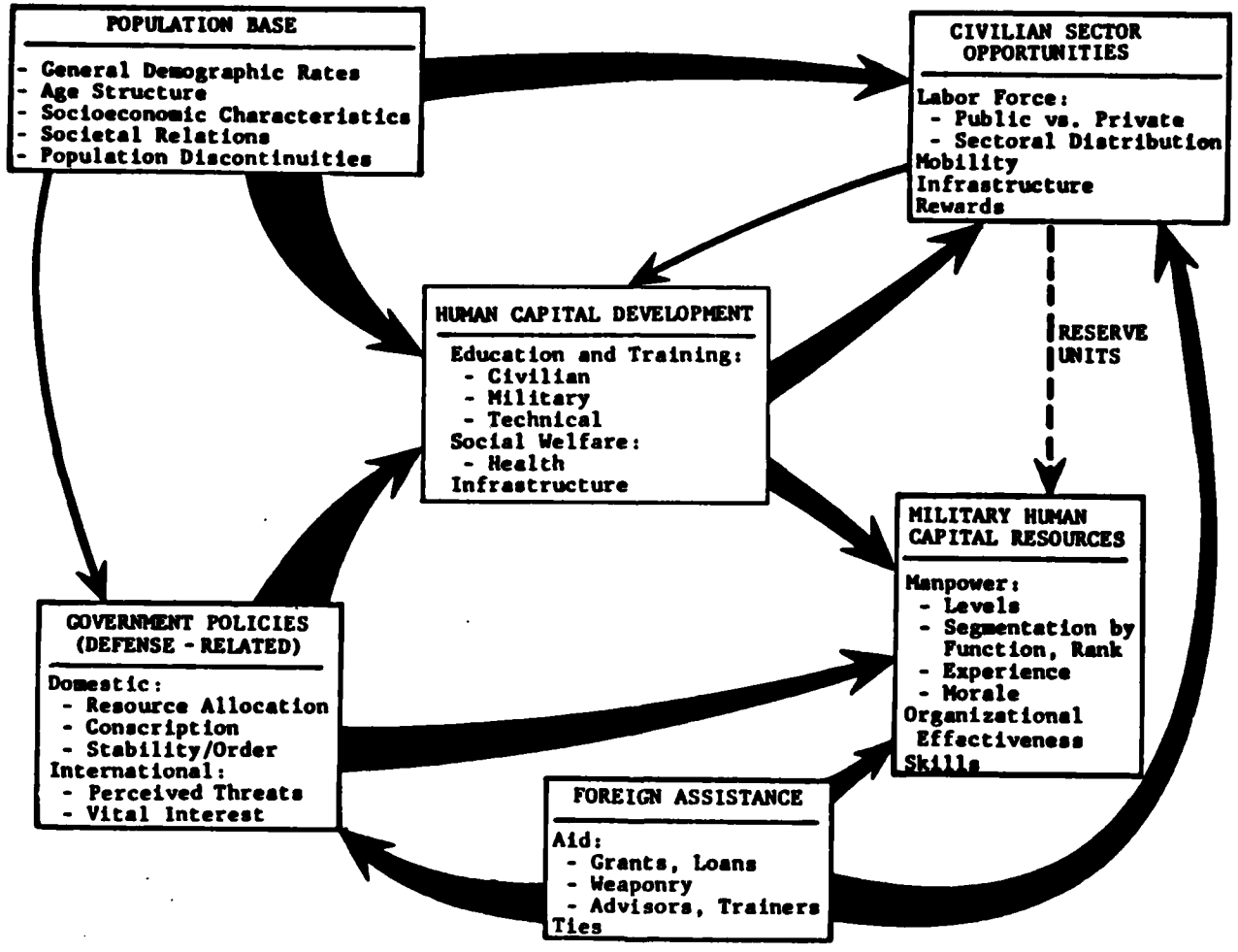

Exhibit II
POPULATION BASE SECTOR

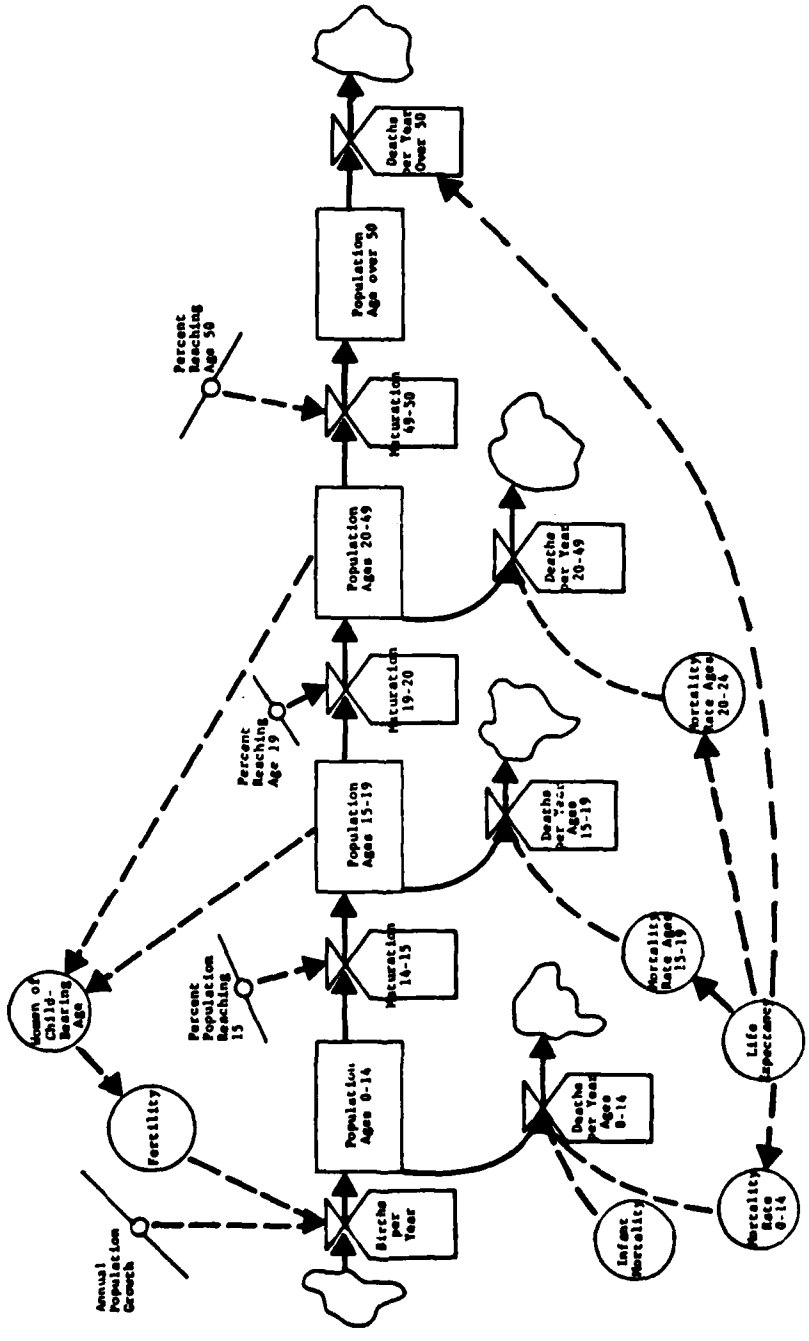

Exhibit II-B

Data Reference Index

Data Item:	Chap. II	Chapter III										Data Table
		A	B	C	D	E	F	G	H	I	J	
Births Per Year	4			3				3				II-3
Population 0-14				3			3	3				II-5
Population 20-49					3							IV-1
Population 50+				3	3				3		2	II-5
Maturation 14-15	1											
Maturation 19-20	2	3		3				3	3	2	2	IV-1
Maturation 49-50	4											
Life Expectancy	4		3	3	3	3	3	3	3	2	2	II-3
				4								
Infant Mortality		4		3								II-4
				4								
Mortality Rate 0-14												
Mortality Rate 15-19												
Mortality Rate 20-24												
Deaths Per Year 0-14												
Deaths Per Year 15-19	2						4	3				
Deaths Per Year 20-19	4											
Deaths Per Year 20-49												
Deaths Per Year 50+												
Women of Childbearing Age	4											
Fertility	4											II-3

Exhibit III
HUMAN CAPITAL DEVELOPMENT SECTOR

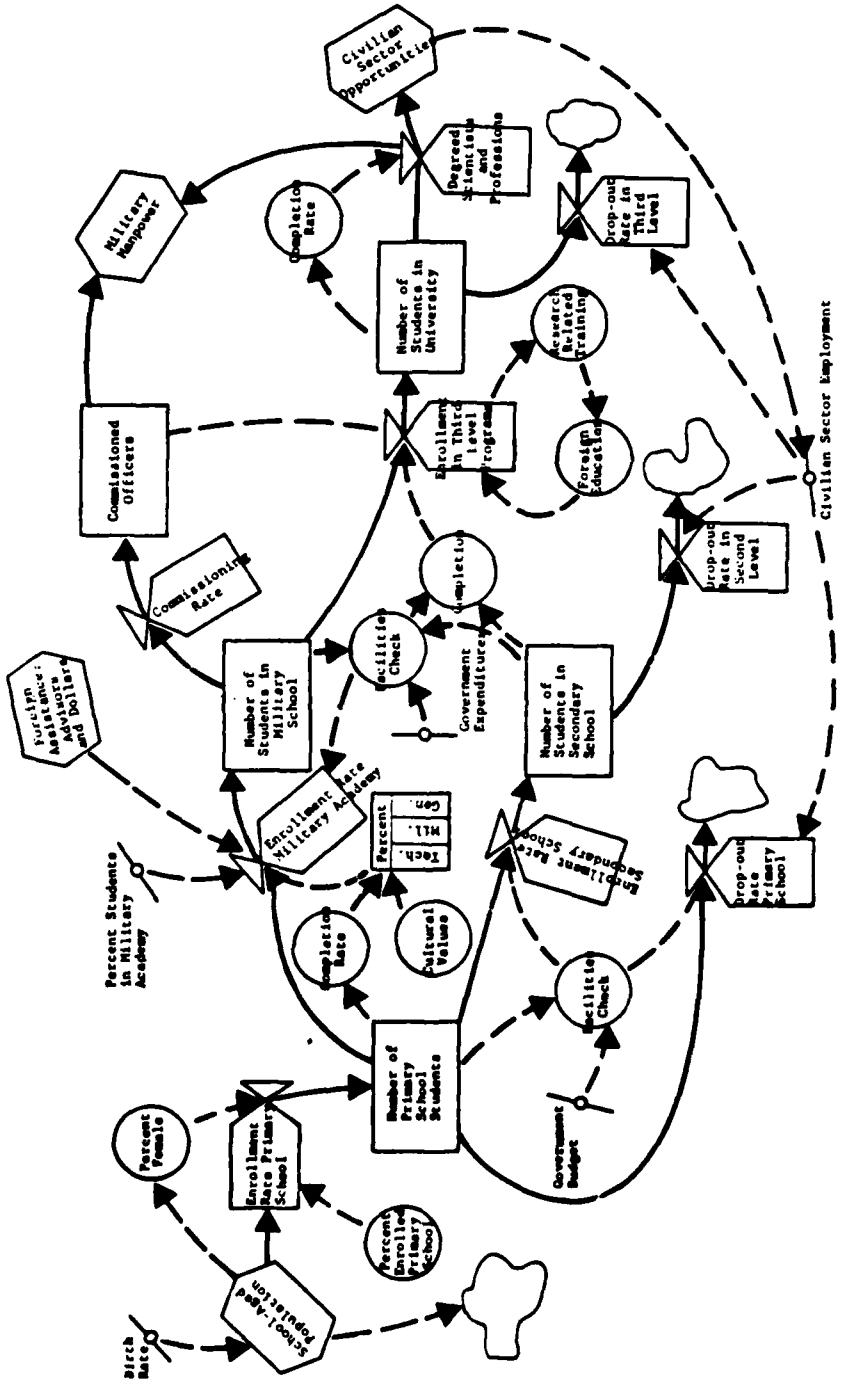

Exhibit III-B

Data Reference Index

Data Item:	Chap. II	Chapter III A	B	C	D	E	F	G	H	I	J	Data Suppl Table
School Aged Population												
% Female												
% Enrolled Primary		4			3		3	4	3	2	3	III-4
Enrolled Rate Primary												
Number of Primary Students												
- Drop Out Rate												
- Completion Rate		4										
Facilities Check												Non-Q*
Enrollment Rate Secondary				4	3		3	4	3	2	3	
Number of Secondary Students		4										III-4
- Drop Out Rate												
- Completion Rate												
Cultural Values	5						1		3			Non-Q
% Technical	7								4			
Military		4										III-5
General												
Enroll Rate Mil. Acad.												
Foreign Assistance												
Advisors and Dollars	4		6	5	4	1	5	5	4	3	3	V-5, 6,7,8
	6			6 7	5	5		6	5		4	V1-3
Number of Students Military	4											
Facilities Check		7	5	6	4	5		6	4	3	3	Non-Q
Completion	4		5									
Commissioning Rate												
Commissioned Officers												
Enroll. in 3rd Level		4	3	4	3		3	4	3	2	3	III-4
Research Related Train.	4	4										Non-Q
Foreign Education		4		6	4	5	3		3		3	
Number of Students in University												III-4
- Drop Out Rate												
- Completion Rate	4	4										

* Non-Q = Nonquantifiable.

Exhibit III-B

Data Reference Index

Data Item:	Chap. II	Chapter III										Data Suppl Table
		A	B	C	D	E	F	G	H	I	J	
Degreed Scientists and Professionals												
Civilian Sector Opp's	1 6 7	5 6	4	5	4	3 4	4	5	4	3	3	Non-Q
Military Manpower	1	3 5	1 4 6		3	6	4	4 5		2	2	I-1, VI-1,2 4,5,6

Non-Q = Nonquantifiable.

Exhibit IV

GOVERNMENT POLICIES (DEFENSE-RELATED)

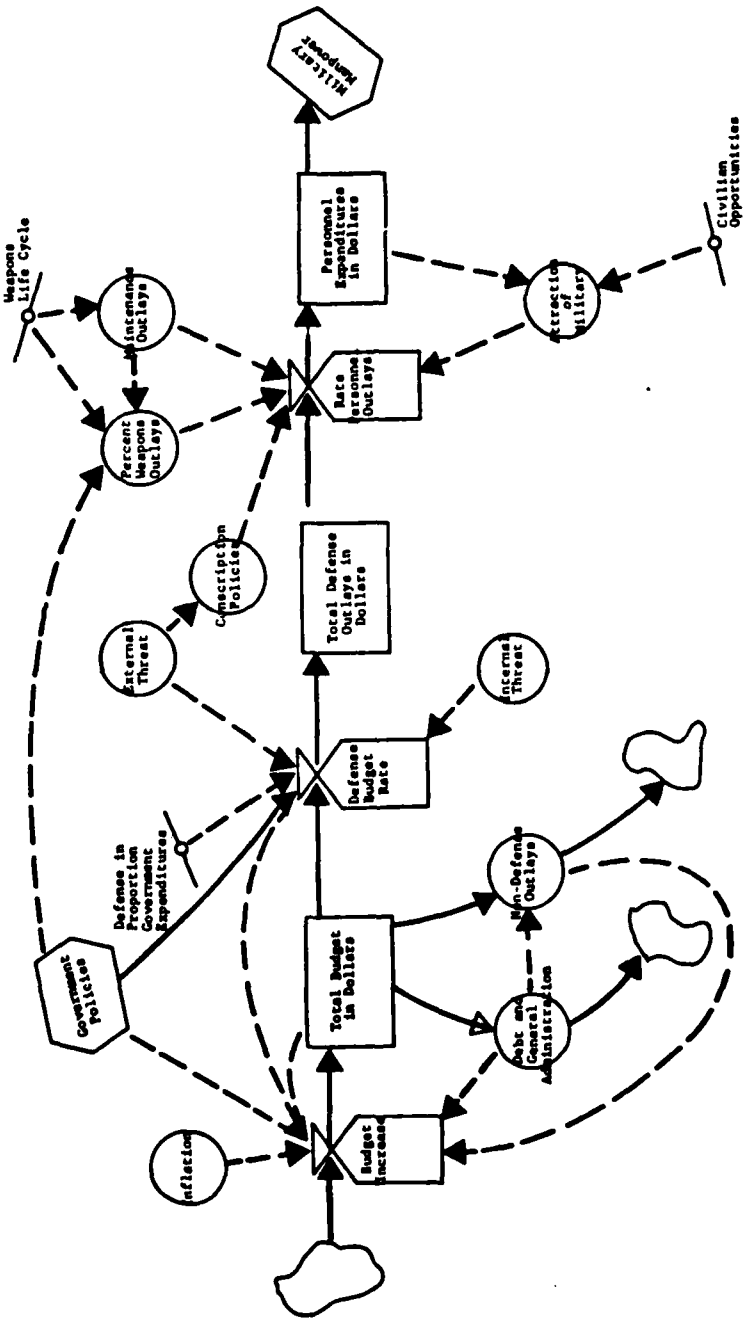

Exhibit IV-B

Data Reference Index

Data Item:	Chap. II	Chapter III A	B	C	D	E	F	G	H	I	J	Data Suppl Table
Budget Increase										3		
Inflation			4									I-2
Total Budget in Dollars	5		4	6								
Government Policies	1	2	2	1	2	1	2	2	1	2	2	Non-Q
	5			2					2			
	7			3								
	8											
Debt & Administration												
Non-Defense Outlays												
Defense Budget Rate			4									
Defense as % Government Expenditures	5			5								I-1
				6								
Internal Threat	5	1		1	1	2	1	1	2	2	1	Non-Q
		2		2	2			2				
				3	5			3				
				7				6				
External Threat	5	2	1	2	2	2	2	2		3	1	Non-Q
		8	2	3			4	3				
Conscription Policies	2	5	2	5	4	3		5	3	2	2	VI-2
	5		3			4						
			4									
			5									
Total Defense Outlays $												V-4
% Weapons Outlays										2		
Rate Personnel Outlays	5											
Maintenance Outlays	5											
Weapons Life Cycle	3											
Personnel Expenditures	5											
Attraction of Military	6	6		5	4		4	4				Non-Q
	7											
Civilian Opportunities	1	5	4	5	4	3	4	5	4	3	3	Non-Q
	6	6				4						
	7											
Military Manpower	1	3	1		3	6	4	4		2	2	I-1
		5	4					5				VI-1,2
			6									4,5,6

Non-Q = Nonquantifiable.

Exhibit V

FOREIGN ASSISTANCE SECTOR

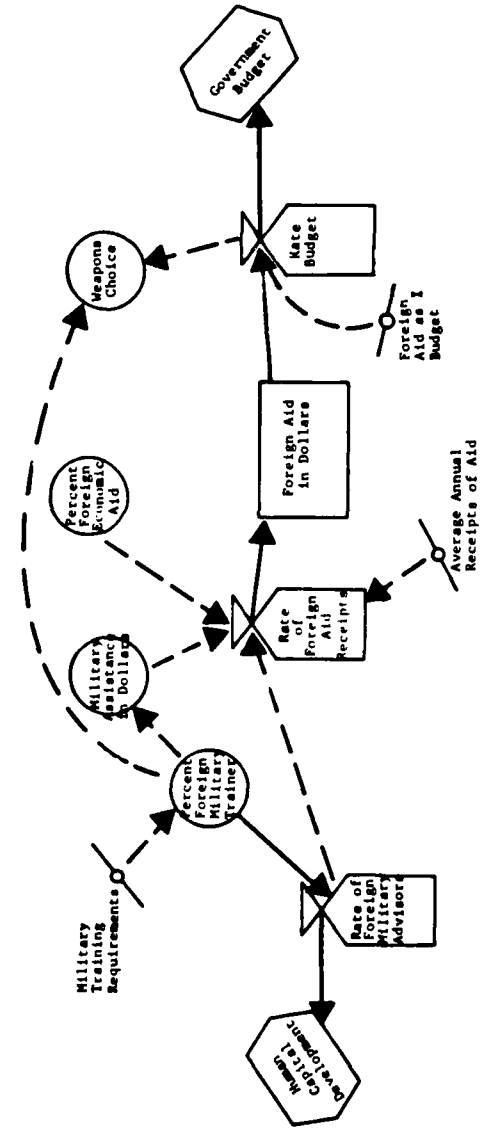

Exhibit V-B

Data References Modes												
	Chap.	Chapter III										Data Suppl. Table
Data Item:	II	A	B	C	D	E	F	G	H	I	J	
Human Capital Development	5 6 7											Non-Q
Foreign Military Advisors	6								5	3		
% Foreign Military Training	4 6		6	6 7	4	1 5	5	5 6	4 5	3	3 4	VI-3
Military Assistance $	6		6	5 7	5	5	5					V-6,7,8 VI-3
% Foreign Economic Aid	6				2 5						4	
Foreign Aid	1 4 6			4 6	1 2 5			6			4	
Rate Budget Weapons Choice Government Budget						6			2			Non-Q

Non-Q = Nonquantifiable.

Exhibit VI

CIVILIAN SECTOR OPPORTUNITIES

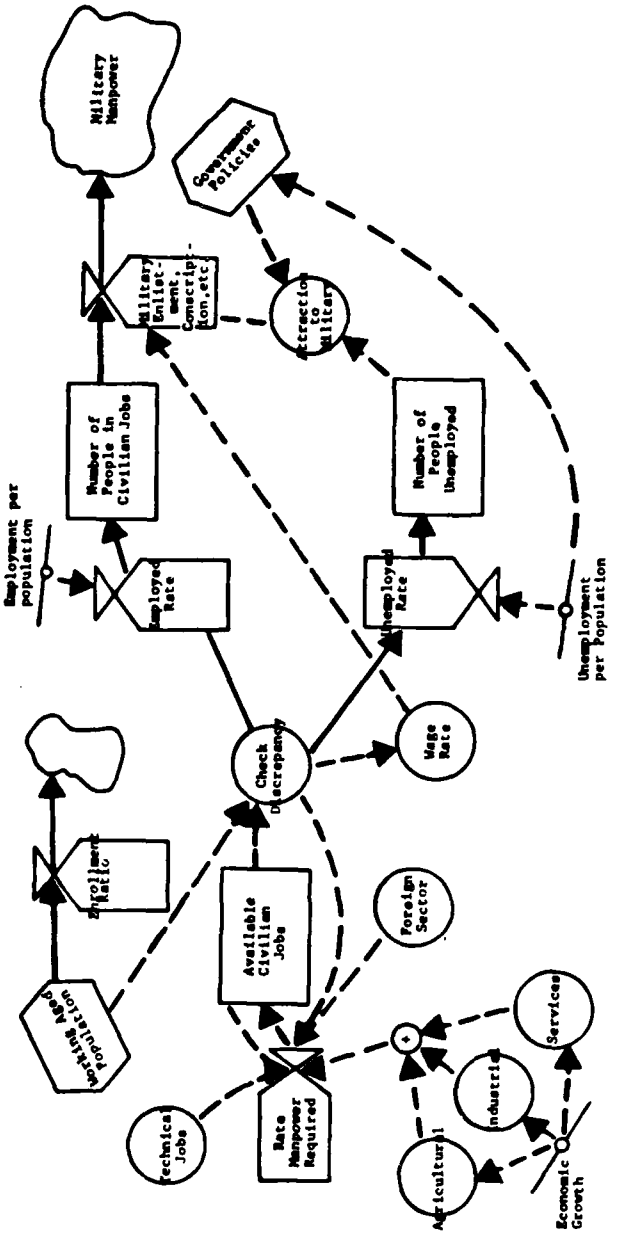

Exhibit VI-B

Data Reference Index

Data Item:	Chap. II	Chapter III A	B	C	D	E	F	G	H	I	J	Data Suppl Table
Agricultural					4			5				
Industrial		5	3		4			5				IV-2,3
Services					4			5				
Technical Jobs												
Foreign Sector		3	2	2	2	3	1	1	2			II-8,9
			3					5	3			IV-3
									4			
Rate Manpower Required												Non-Q
Available Civilian Jobs		6										
Working Aged Population			3			3						IV-1
Enrollment Ratio												
Check Discrepancy												
Wage Rate	6	6		5		3			4		2	
						4					3	
Employed Rate												
No of People in Civilian Jobs												
Unemployed Rate	6						4			3	2	
											3	
No of People Unemployed	6						4					
Attraction to Military		6	3	5	4	3			4	3	2	Non-Q
						4					3	
Government Policies	1	2	2	1	2	1	2	2	1	2	2	Non-Q
	5			2					2			
	7			3								
	8											
Military Manpower	1	3	1		3	6	4	4		2	2	I-1
		5	4					5				VI-1,2
												4,5,6
			6									

Non-Q = Nonquantifiable.

Exhibit VII

MILITARY MANPOWER RESOURCES SECTOR

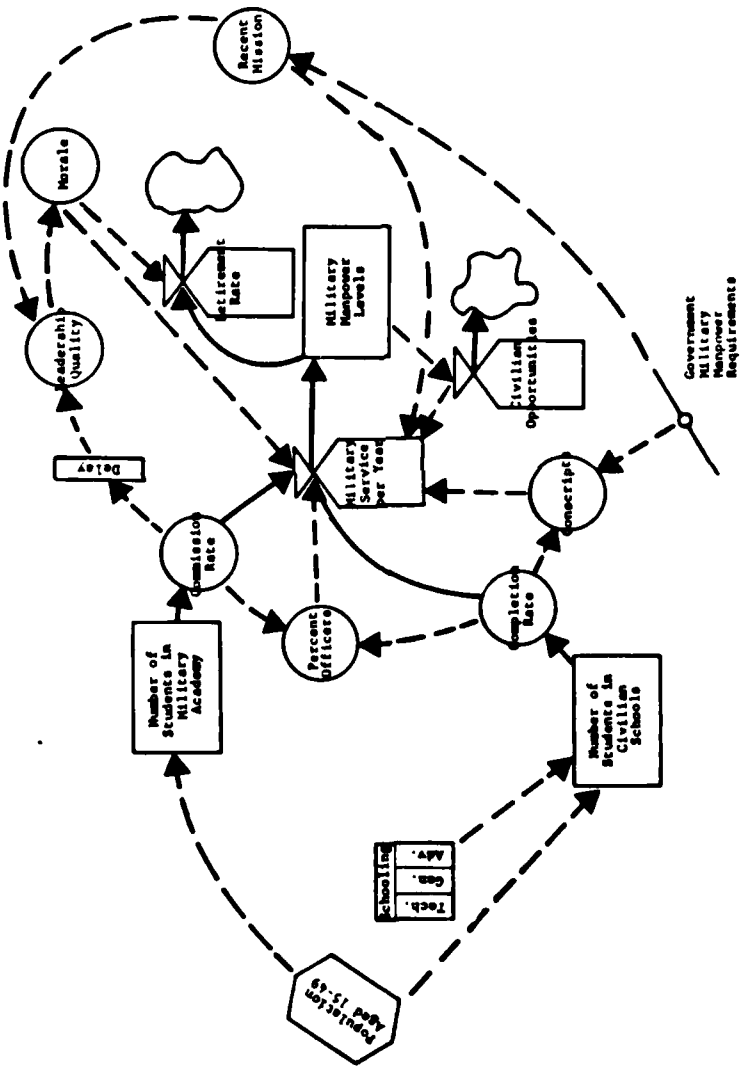

Exhibit VII-B

Data References Index

Data Item:	Chap. II	Chapter III A	B	C	D	E	F	G	H	I	J	Data Suppl Table
Population 15-49		3				4						IV-1
Schooling:												
Technical									3			III-5
General	4											
Advanced												
No. in Civilian Schools	4											
Completion Rate												
Conscripts		3 5			4	3						
No. in Military Academy	4		5									
Commission Rate		5										
Percent Officers												
Delay												
Leadership Quality	3 7			7			5		1			Non-Q
Morale	7	2 8						6				Non-Q
Mil. Service Per Year		5										
Civilian Opportunities	1 6 7	5 6	4	5	4	3 4	4	5	4	3	3	Non-Q
Retirement Rate												
Recent Mission	7		2 6	7		5	5	2 6	2	4	4	Non-Q
Military Manpower	1	3 5	1 4 6		3	6	4	4 5		2	2	I-1 VI-1,2 4,5,6

Non-Q = Nonquantifiable.

CHAPTER III

COUNTRY STUDIES

III. COUNTRY STUDIES

GENERAL CONSIDERATIONS

In addition to the determinants of military manpower such as demographics, economic resources and infrastructure, and educational and health services, there are less easily quantifiable considerations which must be taken into account. These are discussed below as an introduction to the country-specific treatment of manpower dynamics in the sections which follow.

The first of such considerations is historical experience, which affects the motives, values, and psychology of leaders and commoners, educated and uneducated, rich and poor. In the Arab experience looms large more than a thousand years of rivalry and conflict between the Muslim and Christian worlds and the belief that during much of the last two hundred years the West has exploited the Muslim world. Moreover, Arab countries see Israel as the instrument of Western policy and as a colony set down in Arab territory, creating the Palestinian diaspora. And of course, centuries of persecution culminating in the Holocaust and the final drive to create a Jewish state dominate the Israeli experience.

Out of these experiences come much of the propensity for conflict in the area. It influences the will to fight and the attitudes of the contending armed forces. For the Arabs, the motive is revenge, the revival of honor, and the perception of regaining what is rightfully Arab; for the Israelis, it is survival and the safety of the homeland.

Nationality is also to be considered. Morocco, Egypt, Syria, Iraq and Iran traditionally enjoyed a sense of national identity, though usually as the center or part of a larger empire. None became a state in the modern sense before this century. Israel was of course a state (or kingdom) in ancient times, but its statehood was interrupted for many centuries and its people dispersed. Among the Arab states, some are much better united and integrated than others. Some are an uncertain combination of ethnic and religious groups of greater or lesser diversity. None of the states being considered in this study is as disunited as Lebanon, but Lebanon is by no means the only divided state. The fact that the Arab states share the Muslim religion (with two major sects) and enmity for Israel does not mean that they are incapable of going to war against each other. Iran, which is Muslim but not Arab, is hostile toward Israel but far removed; and is largely driven by its revolutionary Muslim ideology.

The psychology of Middle East Muslims affects their behavior in many ways. One of the most important ways in which it influences the military is through the ancient concept of "face" which stipulates that a man cannot appear to be wrong or responsible for misfortunes affecting others without losing his honor and "blackening his face." He is then "shamed" and often

subjected to punishment. This attitude engenders a tendency to shun responsibility and to refuse to acknowledge and correct mistakes; and is also manifested in the reluctance to tell a superior bad news.[2] This often leads to the leadership's publicly--and often misleadingly--insisting that all is well. These attitudes and reactions are detrimental to military organization.

Modernization is in many ways key to the development of an effective military establishment in this age of advanced weapons, communications, transport, and of complex organizational and supply problems. The most developed Muslim nations of the Middle East (like Egypt) have the best manpower resources. Some of the least developed, like Libya and Saudi Arabia, have the resources from oil sales to spend heavily on institutional and economic infrastructure and which will improve their manpower resources in time. Israel has outstanding educational and health facilities, highly developed scientific and technical institutions, and an extraordinarily inventive and productive arms industry with the most effective military force in the area. In short, there would seem to be every stimulus to modernization for any state ambitious to improve its manpower resources and its military capability.

However, in the minds of many Muslims, modernization connotes Westernization, which in turn implies a breakdown of Muslim moral, social, and religious values. This is an unresolved--perhaps an unresolvable--problem which each Muslim country approaches in a different way. For some time Saudi Arabia has proclaimed that its objective is "modernization without Westernization." Libya has its own version of social and political reform in accord with Muslim principles which provides a place for technology and "modern" weapons and machinery. Currently the most important influence against things modern is the fundamentalist Islamic revolution in Iran. The Iranian Islamic revolution is violently hostile to the West, and to the United States in particular. It is exercizing a powerful influence on conservative movements in other Muslim countries, including some of the most modernized. The full impact of this anti-Western and anti-modern movement has not yet been felt, but its influence on the populations of every Muslim state could be significant for their military as well as political and religious establishments. That the Islamic revolutionary soldiers in the Iranian army have fought the Iraqis with considerable success demonstrates what many modern Arab armies have not: a willingness to stand and die. "Modern" is not always best in military conflicts, as has been seen in Vietnam and Afghanistan.

Comparing the fighting ability of the military manpower of the states under consideration is a difficult one. Perhaps the best basis for judgment is the record of actual combat in recent years: the Arab-Israeli wars, the Egyptian expedition in the Yemen, clashes between Moroccan and Algerian forces in 1963 and the history of conflict in the Western Sahara and Chad, as well as the Iraq-Iran War.

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2 Shunning responsibility also comes from a fear that failure will have an adverse affect on an individual's future progression rather than from a fear of being shamed; this dynamic would reflect Islam's emphasis on the individual.

Comparisons are probably only possible and useful when made between forces that have fought each other or are likely to. In other words, ranking the manpower in the ten forces being examined would probably not be useful, (i.e., Morocco vs. Algeria, but not Morocco vs. Iran).

A final consideration is the importance of recognizing the uniqueness of each of the nations under study. All differ in geographic situation; economic resources; modern industrial, educational, and health-care infrastructure; and in the character of their manpower. Egyptians and Jordanians make different kinds of soldiers than do Israelis, Iranians, or any of the other nationals.

EGYPT

COUNTRY PROFILE

Egypt's identity as a nation, unlike all other Muslim states in this study except Morocco, goes back for a long time. It is relatively homogeneous and stable, politically and socially.

The country is also the most modern of the Muslim states and has the most advanced and most extensive social and economic infrastructure, including educational institutions, health services, and industrial base.

Egypt has until recently maintained the largest military establishment in the Middle East since before World War II and has borne the brunt of the Arab conflict with Israel in major wars in 1948, 1956, 1967, and 1973, as well as in the "War of Attrition" in 1968-1970. It also fielded an expeditionary force of as many as 30,000 men in Yemen between 1960-67. The country has the largest pool of military manpower in the area, although Iran's is close.[1]

Egypt's armed forces performed poorly in the wars with Israel of '48, '56, and '67. Their record in the Yemen seems to have been reasonably good. It is in the '73 war that Egyptian forces demonstrated their potential. In 1973, Egyptian goals were well defined, planning was good, security was maintained, and both officers and men performed well in battle. In the end, they failed to win the war probably because of their acceptance of an excessively elaborate and inflexible tactical doctrine which their Soviet mentors taught them, the failure of their high command to pursue their initial advantage vigorously, and the Israelis' unflagging determination and will to go on to victory.

The dramatic change in the quality of Egyptian military manpower in the '73 war following many years of dismal performance probably contains a lesson for those who would evaluate the quality of the military manpower of any or all the Muslim states in the Middle East: it can change. Why the change in Egypt? The answers are probably several: a new generation of senior officers; several years of intensive training under Soviet guidance; and the boost to morale that came from taking the initiative rather than having to improvise frantically after blundering into war.

Just as significant as the change in Egyptian military manpower manifested in the '73 war is the likelihood that it has not and will not persist.

Nasser worked his countrymen into a frenzy of nationalism upon which Sadat could capitalize when he offered one last valiant effort to win Egypt's honor

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1 See Data Supplement Volume, Table VI-1.

and reputation in war. The near success of the 1973 campaign gave Sadat the support he needed to reverse Egyptian policy and try for peace with Israel. Support was based, however, on the promise that peace with Israel would bring prosperity to Egypt and a change in the general Arab-Israeli relationship. Sadat's promises were not fulfilled. Furthermore, his regime manifested increasingly apparent corruption and inefficiency compounding uncertainty and disillusionment both in the civilian population and the military.

Egypt's size and the relative modernity of its infrastructure are out of line with its basic and growing poverty. While other Middle East states have found new wealth in oil, Egypt's wealth has decreased as a result of years of heavy expenditure on the military--as much as one-third of GNP during several years before 1973--and a steadily high rate of population growth in a country with one of the highest densities of population per unit of arable land anywhere in the world, with little or no prospect of increasing the amount of land fit for agriculture, small oil reserves, and with very few other natural resources. Further more, Egypt's economic and industrial infrastructure is breaking down after years of neglect and the weight of a population that has increased from 20 million at the end of World War II to 45 million today. Egypt has the lowest income per capita of any of the ten states considered in this study and a population that is increasingly aware of its poverty.

MANPOWER DETERMINANTS

1. Government Policies

Even before the Nasserite Revolution of 1952, Egypt's geographic position between Africa and West Asia in the center of the Arab World affected government policy. Its size, relative resources and manpower, relatively modernized institutions and its cultural influence gave the nation a leading regional role.

The Revolution of 1952 and President Nasser's role as spokesman for Arab Unity and Nationalism made Egypt the leader of the Arab World. The country took the brunt of the military and economic burden in the wars with Israel. By the time of Nasser's death in 1970, however, Egypt's military defeats and its economic decline--particularly when contrasted with the oil-rich states of the area--created the situation by which President Sadat, after the redemption of Egyptian honor in the 1973 war, could break with the past by renouncing Egypt's military role in the conflict with Israel, sign a peace agreement with its former enemy, and focus more on Egypt's national needs and problems.

Egypt's national security policy since Sadat's dramatic change in approach to Israel has altered the military's mission, it's role in the nation and the region, and its morale. From the time of Nasser's decision to go to the Soviets for arms in 1956, the Egyptian armed forces were developed to play the role of leader in the confrontation with Israel. Most of the Egyptian officer

corps has made its career in the armored force. Now the Egyptian military's role is confined to defense against Israel and providing a quick reaction capability in Northeast Africa. Military spending is down dramatically and there is no way that the weapons left to Egypt after the 1973 war can be maintained.

In other words, Egyptian military manpower, having reached a peak of quality and capability in 1973, may be back where it was in 1967 or before.

2. The Population Base

Egypt has a growing population of 45 million, and armed forces of 300,000 or less, a number which is down from about 400,000 after the '73 war and is probably still diminishing. This means that considerably less than one percent of the population is in the armed forces.[2]

Of the 45 million Egyptians, about 11 million are males between 15 and 49 years of age and 7 1/2 million of these are considered fit for service. (This is, incidentally, a higher percentage of males fit for service than in the other countries in this study except for Israel and Jordan.) Annually, 469,000 males reach the age of 20--the age at which men are subject to conscription. Thus, with 469,000 physically fit men available each year for armed forces numbering only 300,000, Egypt has an ample pool of manpower from which to draw. Of the 469,000 fit men only about 100,000 are inducted annually.

Women in Egypt in the middle and upper social and economic levels are less restricted than in most Muslim societies. They still play no significant role in the armed forces, however. There are token numbers in uniform, and their contribution is made in clerical and administrative functions.

Ethnic and religious divisions are not the source of problems which affect the performance of military manpower. Of the Egyptian ethnic majority, a part is made up of Egyptian Christians or Copts. They are not a source of serious weakness or conflict within the armed forces.

At least 10 percent of the total population of Egypt is made up of various Mediterranean ethnic groups--Greeks, Italians, Syro-Lebanese--many of whom have roots in Egypt that go back several generations. They are not a problem in the armed forces, though; like the Copts, they are less likely to serve than the Sunni majority.

Over time, one change in the Egyptian population which may have implications for the quality of military manpower: the country's rapid urbanization. The percent of the total population living in cities increased from 38% to 44% between 1960 and 1980 and the cities are still growing. The consequence may be a smaller pool of the tough, hard-working fellahin that in the past furnished the backbone of the armed forces. Conversely, Egyptian society may produce more "modernized" and better-educated urbanites, but this sector in Egypt characteristically produces poor soldiers.

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2 See Data Supplement Volume, Tables VI-4 and VI-5 for alternative estimates.

3. Civilian Human Capital Development Programs

Health: By regional standards, Egypt has for some time had medical and health education services of high quality and has about one physician per thousand population--high for the region. The numbers of nurses in relation to the population is less than average, but Egypt has had a system of village clinics offering simple health services since the mid-fifties. It had one hospital bed for each 460 persons in 1970. Four other of the ten states being studied had more beds in proportion to the population in 1970. Egypt's standing has probably changed as a result of oil states' increased spending on health care. Overall, Egypt's expenditures on health services per unit of population are relatively low.

Nutrition in Egypt is reasonably good. Mortality rates are high but how high is uncertain because of the poor quality of records. Egypt has had a relatively vigorous and well-organized family planning service for some time. In 1970, 9% of married women were said to use the service and the number is certainly higher now. The effect of this program on the rate of population increase, however, is not enough to significantly raise the quality of life and public health through population control. Eye diseases and schistomiasis (Bilharzia)--a debilitating disease caused by an intestinal fluke carried in canal water--have been important factors in reducing the number of physically fit men available to the armed services. The incidence of both diseases is being reduced, but a large part of the population still does not have access to pure water.

Education: Egypt has one of the oldest and most extensive systems of education in the Muslim Middle East, providing modern--i.e., European as opposed to Islamic-religious instruction. The government has long been and continues to greatly emphasize education. By law, all graduates of Secondary Schools are allowed to enter a university--though many have a very short stay there--and every university graduate is guaranteed a job--though the waiting time stretches into several years and often ends in a kind of bureaucratic welfare condition including very low levels of reimbursement.

Egypt is said to have spent 5.2% of GNP on education in 1977, a percentage that was then lower than that in Algeria, Iran, Morocco, Saudi Arabia, and Israel. Expenditures are now certainly considerably less than that in the states with oil income.

In 1980 Egypt had 76% of the proper age group enrolled in primary schools, 52% in secondary schools and 15% in higher education. In every case there was a much higher proportion of males than females enrolled. In comparison with other Middle East nations, this was a relatively low proportion for primary school, about average for secondary schools, and relatively high for higher education. The pupil-teacher ratio for primary and secondary schools is average-to-high and the adult literacy rate about average.[3]

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3 See Data Supplement Volume Table I-2.

A relatively high proportion of Egyptian secondary school pupils are enrolled in vocational studies. In 1973, however, 16% of students in Higher Education were in science and engineering with 2% studying abroad--in both cases a low percentage compared to other states in the region.

In 1976-77, Egypt had 178 students in American universities and technical schools--low compared with Iraq, Jordan, Saudi Arabia and Libya--though all those states have fewer facilities for higher education at home than has Egypt. One important area in which Egypt does excel is in expenditures on research and development. Though the country spends less per person engaged in R & D than other area states, it supports a higher-than-average number of persons so engaged.

But the above comparisons are not what is most important about the Egyptian educational system: it is the number of Egyptian graduates in relation to Egypt's own needs. Egypt's educational establishment produces more graduates in all fields, including science, engineering and the professions, than it needs or can employ domestically. The consequence is a supply of trained people available to the military, despite the substantial movement of Egyptian graduates into the foreign job market.

A great many graduates of Egyptian universities and technical schools are of low quality, but a substantial number are well trained and competent in their field.

Egypt relies heavily on on-the-job training at all levels of skill, including jobs of a technical nature. With 13% to 30% of the labor force in some kind of industry, Egypt has a relatively large proportion of its people learning skills of value in the economy's modern sector and in the armed services.

4. National Human Resources

Egypt is a poor nation with economic and resource problems of increasing severity and a deteriorating national infrastructure. Because of its size and the existence of mature and relatively high-quality institutions contributing to the development of human capital, Egypt has what is probably the best--with the exception of Israel--and certainly the largest, national human resources pool in the area.

Furthermore, those Egyptians that are physically fit, have character traits that make them relatively teachable and adaptable. Many are hard working. The very best of them are competitive by world standards in the most complex and demanding fields of modern technology and management.

The most important divisions in Egyptian society are those between the classes: the very rich descendants or replacements of the Turkish titled aristocracy of Beys and Pashas, now contractors and business and professional men; the middle class of traders and clericals, the effendis of an earlier

time; and the peasantry or fellahin who make up the vast bulk of the population. The Nasserite Revolution of 1952 brought some changes in this structure but the basics remain. Although Nasser tried to change the old order, the replacement was a kind of bureaucratic socialism in which the masses were still ruled from above. This translated into a military force with a wide gulf between officers and men. The most common observation made by Israelis who fought Egyptian forces in the wars from 1948 to 1967 was that the Egyptian soldier was basically sound and that he was tenacious and reasonably skillful in the use of all but the most complex modern weapons. The officers, however, were another matter: distant from their men, unwilling to dirty their hands or risk their lives, and quick to run from difficulty or danger. The improvement of the Egyptian performance in the '73 war is generally attributed to changes in the quality of the officer corps.

5. Civilian Versus Military Opportunities

The Egyptian armed forces conscript about 100,000 men per annum for three years service. Conscripts number 180,000 out of 315,000 men in the Army, 15,000 of 20,000 in the Navy, and 10,000 out of 27,000 in the Air Force. A number of conscripts satisfy the requirements for military service in Reserve and Paramilitary units. Pay and conditions of service are not adequate to entice volunteers; the military has little appeal for the average Egyptian who prefers leisure and independence.

Military service is, however, fairly attractive to those with the skills--usually obtained after conscription--required of non-commissioned officers who enjoy pay and privileges which compare favorably with what they would get for similar skills in civilian life.

The officer corps is a particularly advantaged group. After the revolution of 1952, which was carried out by a small group of low and middle-grade officers of middle-class origin, the prestige, power, and role of military officers increased dramatically and has remained high. Special perquisites and opportunities add to the appeal of service in the officer corps.

These circumstances prevailed until the change in national security policy which followed the peace agreement with Israel. Since then, the military has had less money to spend and a less exciting and challenging mission. There has also been a considerable increase in opportunities for jobs in the oil states of the Middle East at salaries higher than officers' pay in Egypt. The armed forces are having a hard time providing enticements that match those of the oil-rich states.

The imbalance between Egypt's production of university graduates and the requirements of its domestic economy produced a situation in which engineering graduates found themselves lucky to get a job in a profession paying less than that of skilled artisans--masons, mechanics, cooks. This is still true but to a much lesser degree. Turmoil in Lebanon has brought a good many regional headquarters of international companies to Egypt and created some jobs for

those who speak foreign languages and have management or professional skills. By far the biggest factor in the change, however, is the demand for a wide range of skills in the oil states. Even during the "oil glut," a steady flow of Egyptian professionals and skilled artisans continues to the Gulf states and to Libya. It is estimated that there are between three and four million Egyptians working in these states at salaries as much as ten times those that they would have received in Egypt.

This "brain drain" from Egypt has the potential for creating manpower shortages. So far the movement to find work abroad has had the greatest impact on Egypt's supply of skilled artisans and technicians--as opposed to degree holders. Of the former, there was a shortage even before the movement abroad began.

6. Military Training

The Egyptian armed forces have comprehensive training programs for enlisted men, NCO's, and officers. It has been and continues to be, necessary to assume that training must begin with the fundamentals and go all the way up. Thus, basic training for the conscripts includes some parts of ordinary primary schooling and, in some cases, secondary education and remedial instruction.

After basic training, recruits go to the special school of their assigned arm of the service. They then go to their units and participate in an annual cycle of training and instruction.

Conscripts who finish their required service can volunteer for NCO school. When they become NCOs, they are sent to a variety of specialist schools where they become the technicians of the armed forces. Many attended Soviet schools before 1973 and now attend their Western equivalents.

There are three service academies with stiff entrance requirements and a wide variety of training schools for different career levels and different service specialties. There is an Armed Forces Technical Academy and special technical courses for each of the services. There are staff colleges and a senior officers' course. The relationship of the Egyptian armed forces with the British, the Soviet, and now the American military has produced confusion at times and necessitated a difficult process of amalgamation to produce an Egyptian military doctrine.

Reserves play an important training role and are used extensively in support of the military training system.

The Egyptian command uses both on-the-job training and unit practice for development and maintenance of skills. Regular exercises are prescribed.

Israeli observers, however, have frequently made the point that one of their advantages over the Egyptians in war has been their own practice of using every lull in combat for exercises and review of tactics while the Egyptians have been disposed to relax.

Beginning in 1955, the Egyptian armed forces became heavily dependent on Soviet arms supplies and on Soviet instructors and advisers. At the time of the 1967 War of Attrition, many of these advisers did a good deal more than advise, actually emplacing, maintaining, and employing weapons in combat.

There were as many as 15,000 Soviet advisers in Egypt in the period before the 1973 war. Before the war began, however, Sadat ordered them out of the country and planned and carried out the military operation with Egyptian and Syrian officers.

After the War and the Camp David agreement, the U.S. has stepped into the Soviet role, but with nothing like the same volume of support and weaponry.

7. Military Manpower Resources

The Egyptian military has no manpower problem *per se*.

But several circumstances have probably reduced the overall quality and capability of the Egyptian armed forces, even in light of its new, less ambitious mission.

Egyptian military equipment is still largely Soviet and, without access to spare parts and Soviet maintenance instruction and assistance, the equipment's utility is declining. Aside from the spare parts problem, Egyptian technical capabilities are not adequate to restore and maintain their equipment.

An equally difficult problem is the morale of the Egyptian forces. Part of their mission is to provide defense against a possible Israeli attack. Knowing that their weaponry has deteriorated and knowing that they would be unlikely to have the initiative (as they did in 1973), the Egyptian military is unlikely to have much confidence in its ability to defend the country against an Israeli assault.

It is hard to estimate how effective the Egyptian armed forces would be in regional defensive operations. They probably would perform reasonably well against the Libyans but much would depend upon the focus of the confrontation and upon overall circumstances. Probably, they would also do reasonably well in police or anti-guerrilla operations in the Saharan region (as indicated by their record in Yemen), but operations of this sort are difficult and seldom conclusive. Much would depend upon the morale of the post-Sadat Army.

The capabilities of the Egyptian military have certainly been affected by the isolation of Egypt from most of the rest of the Arab world, signified by the Camp David Agreement. Syria is now hostile to Egypt, and Egyptian commanders and men know that were a war with Israel to come about, Syria might not draw part of the Israeli forces away to the North as it has in past wars.

ISRAEL

COUNTRY PROFILE

The Israel Defense Force (IDF) enjoys a special role in that country's society as perhaps the most central, pervasive and symbolic of national institutions, a demonstration of the priority attached since statehood to defend against the commonly perceived massive external threat to the state's security. Indeed, the regular armies of its Arab neighbors invaded the country the day of its founding and Israel has since engaged these forces in five foreign wars at a cumulative cost of over thirteen thousand lives. It was just days after the invasion on May 15, 1948 and in the context of the War for Independence that the new government established the IDF; and the force at once swelled from 30 to over 100 thousand troops to ward off the attacking armies.

The 1949 Defense Service Law formalized the organization of and means of selection into the armed forces, and provided for:

- development of a small cadre of professional standing forces;
- universal conscription to augment these forces; and
- maintenance of a large pool of highly trained reserve manpower, able to be mobilized upon the shortest notice.

What emerged was a streamlined, combined-forces military in the fashion of a large conscript army and supported by a formidable mobilized reserve. Today the IDF boasts a 26:100 ratio of cadres to conscripts, providing for mobilization to a force of 500,000.

But if these characteristics are unique among modern forces, so too are Israel's security requirements. Lacking strategic depth, the state's area (including the occupied territories) totals only 75 thousand square kilometers and is traversed in minutes by modern combat aircraft. These geographic parameters translate into heightened vulnerability, reduced warning time and no allowance for bargaining after the violation of the state's territorial frontiers. From these considerations have emerged a doctrine based upon the unrelenting, forward-led offensive. Given that an armed conflict may likely be a battle for survival of the state, this doctrine emphasizes impermeable defense; short-term battle (preferably on foreign soil); and no negotiation. In situations short of total war, the practice has been to strike at enemy targets with preventive or proportionally greater counter-force out of the belief that a permanent neutralization of Arab opponents is not likely and only unambiguous and severe retaliation will provide adequate disincentive to renewed aggression. Towards this end, the assumed Israeli nuclear capability has enhanced many-fold this notion of forceful counter-attack.

MANPOWER DETERMINANTS

1. Government Policies

For the military as an organization these requirements translate into demanding operational guidelines placing a premium on high technology, a high level of readiness and skilled available manpower, and--most important--rapid and streamlined mobilization capability. These standards are maintained at a high cost to Israeli society: the state has expended roughly $40 billion (U.S.) over the last decade on defense, and presently incurs the highest per capita level of military spending in the world. The length of duty tours for conscripts as well as for reservists is high, and--in spite of the ongoing efforts to develop a defense industrial infrastructure--the country is the most reliant of the states under study here upon external sources of military assistance, as demonstrated by the critical delivery of $1 billion (U.S.) worth of American supplies during the 1973 War.

Nonetheless, Israel's forces are considered to be the finest in the region. External threats from the surrounding Arab states are, for the present and through the period under consideration, likely to continue to be perceived as active and acute, particularly in the absence of a formal peace agreement. Syria has replaced Egypt as the most direct threat, and the presence of occupation forces of both countries in Lebanon exacerbates this potential source of open confrontation. Internal divisions over policy towards (and the maintenance of troops in) Lebanon, as evidenced by the unprecedented, large-scale demonstrations which took place in mid-1983, will have an impact on government practices. Other domestic factors likely to influence government policies affecting military manpower are the status of Arabs residing in the occupied territories and Ashkenazic-Sephardic differences.

2. The Population Base

The population of Israel stands at just over four million and is increasing at an annual rate of roughly 2.6 percent. This rate of increase is declining, however, and is expected to fall to an average annual rate of 1.5 percent over the next twenty years. This places the projected turn of the century population at five million. These statistics take on added importance in the context of Israel's diverse population and the disproportionate growth of the non-Jewish segments of the population. Almost two million Palestinians (or about 40 percent of the total Palestinian population) reside in Israel or the occupied territories and account for 47 percent of the total population. Among the non-Jewish population, the rising birth rate is presently one-third higher than that for Jews, and the death rate slightly less and dropping still. These trends will be of increasing significance through the decades ahead: politically, as the composition of the constituency evolves; and militarily, with the ongoing assimilation of these groups into the armed forces. The military is especially adept at the latter role and has become the state's most open of institutions, providing education, opportunity and socialization for these minority segments of the population.

If Israeli society is an eclectic lot, the most significant division among the Jewish population is between the Ashkenazim, the Jews of European origins, and the Sephardim, who are of Near Eastern and North African origin. Demographic changes in the 1960's affected the character of the general population, and by 1969 the Sephardic immigrants and their descendants outnumbered the Ashkenazic Jews. While the Sephardim constitute the majority of the population, they remain socially, culturally, economically and politically disadvantaged. This is largely rooted in the well established dominance of the Ashkenazim over sociopolitical and economic life in the country.

3. Civilian Human Capital Development Programs

Health: Israel enjoys the region's most advanced medical care and boasts the world's highest ratio of physicians per capita. Of special note and reflecting the high level of public participation in the national civilian support effort is the large scale participation in volunteer health care programs. Life expectancy, infant mortality and caloric intake figures closely match U.S. standards and far exceed these measurements in the Arab countries.

Education: The level of education is also superior to that found in the Arab states and is much more comparable to U.S. or European standards. Literacy on a national level is at ninety percent including the occupied territories. The state provides compulsory religious and secular education through age fifteen. Twenty-six percent of the population go on to pursue some form of higher education.

4. National Human Resources

The labor force in Israel is the most skilled, highly educated and technically proficient of any in the region; but as will be shown in subsequent sections, this manpower pool is stretched thin in meeting both the demands of a sagging domestic economy and the requirements for a high level of military preparedness.

Roughly sixty percent of the working age population (15-64) years comprise the labor pool. Of these, half have since 1960 found employment in services and a third in private industry.

5. Civilian Versus Military Opportunities

Universal conscription and the popular acceptance of the necessity to perform military service minimize the role of attraction to military duty as a key dynamic influencing the manpower supply here. The dedication of the bulk of the defense budget to armaments has precluded the availability of funds for incentives and benefits such as those lavishly heaped upon new recruits serving in the oil-producing Gulf states, where competition with the private sector for skilled labor is more keen and attractiveness of military duty more of an issue. It should be noted that retired senior military officers hold high standing and prestige in key government and private sector positions.

The country is currently battling what is widely acknowledged to be the worst economic crisis in Israel's history. The Israeli economy is experiencing declining growth (a drop in eight percent last year alone), the world's highest indebtedness per capita, an outflow of capital, inflation at an annual rate close to two hundred percent, and the region's highest energy consumption rate. In 1983 the government cut subsidies of food and other basics by fifty percent and devalued the shekel by a quarter of its prior value. These factors are compounded by the diversion of skilled labor and funds into the defense effort. This year's budget of over six billion dollars (excluding costs of the campaign in Lebanon) represents almost a third of the gross national product, and this translates into a strained civilian economy. This economic environment, plus regional strife, offer strong incentives for emigration and this--more than the attractiveness of jobs in the private sector at home--is the greater threat to availability of skilled labor.

6. Military Training

The Defense Service Act of 1949 provides for universal conscription into the armed forces. Service is compulsory for all fit Israeli citizens, male and female, when they reach eighteen years of age. There is no special entrance into the services for officer candidates, no voluntary enlistment for Jews, and no recognition of conscientious objection to military service. The law does, however, grant exemptions to theological students, religiously observant females, and to those who contest service on ethical grounds. Arabs, Christians and Muslims are exempt as well, but may volunteer for duty. Some Druze and Circassian communities have since 1955 been liable to conscription at the request of local leaders. Many of these Druze conscripts are assigned to paramilitary border units along the Jordanian frontier.

Recent immigrants are subject to the same rules as are Israeli citizens through age twenty-nine for men, twenty-four for women. Enlistments for older immigrants are for abbreviated duty tours.

The population includes roughly 800,000 persons of military age, of whom under 700,000 are considered fit to serve. Thirty percent of this fit population (or ninety percent of those finally classified as eligible) are recruited into the armed forces. The system produces 17,000 recruits annually; enough to maintain force levels at a total of up to 200,000 troops.

Israel is the only country under consideration which includes women in its conscription policy in significant numbers. However, only half of the eligible women are recruited and are limited to non-combatant positions. While women are inducted for a period of twenty-four months, men are inducted for thirty-nine months.

Males leaving active duty status remain on reserve until they reach age fifty-four, age thirty-eight for childless women. The demarcation between first and second line reservists is age thirty-nine: younger reserve troops are incorporated into reserve brigades, while older reserve members are assigned to local Home Defense Groups. Upon retirement from the reserves citizens are tasked to non-combatant civil defense organizations.

Members of the reserve through age thirty-nine are subject to spending thirty-one days annually (a minimum of one day per month) engaged in training: officers and non-commissioned officers must participate an additional seven days each year. The premium placed on trained, organized and swiftly mobilized reserves is a measure of Israel's commitment to defense; and the size of the reserve pool serves as a barometer of the political climate. Between 1967 and 1973 annual training liability rose to sixty days.

Almost all training for soldiers in the regular army takes place after the initial three-month indoctrination in decentralized, on-the-job programs. This is representative of the priority attached to the rapid assignment of recruits to combat units and the minimizing of time in training.

There is no special entrance for officers. Israel has no military academies or staff colleges as such. Officer candidates may, during their career, be detailed to civilian universities or military training programs abroad. Those who have served three to five months may be selected to attend the three month non-commissioned officers' training school. During conscript service roughly half of those recruits will advance to the rank of corporal. The officer producing process continues with a three-month program in the Officer Cadet School followed by corps training: the entire program from recruitment through commission lasts fourteen to eighteen months. Final selection for regular officers takes place at the conclusion of conscript service.

Upon completion of conscript duty, army officer candidates participate in a platoon-commanders course, followed by corps training, a company commanders course, and a staff course (required for promotion to colonel).

Most officers are sabras (native born). A quarter of the officer corps are kibbitzniks or Moshavniks, though communal settlers account for only eight percent of the general population. The military also enjoys a special relationship with certain high schools such as the Reali and Herzlia schools in Haifa and Tel Aviv, respectively, which graduate cadets who enter the service as corporals in rank.

Recruits are immediately dispatched to training units where they serve for three months; they are then assimilated into the standing brigades and support units. The objective is to rapidly place fit personnel into combat formation, assigning only specialists and those less fit to the support components.

The army administers a number of technical high schools which provide special skilled labor for the air force, navy, signal, ordnance, and engineer corps. In-service schooling is also available to provide language training and grade school equivalency certification to poorly educated (often North African and Yemeni) recruits. This function doubles as the primary vehicle for instruction in Hebrew among the immigrant population and reinforces the army's melting pot role.

An army-wide commanders course and staff course are open to regular and reserve officers; otherwise all post-induction training is decentralized and takes place at the corps level. These programs are superior to the training found elsewhere in the region.

Israel was initially heavily reliant upon volunteer manpower from abroad to fill critical skilled positions in the military, particularly in the air force and navy. (It was not until 1952 that all pilots held Israeli citizenship.) Weapons procurement suffered under political constraints through the mid-1950s, when Western European sources of small and surplus armaments became available.

Since then foreign assistance has largely taken the form of arms supply, and since the delivery of anti-aircraft systems in 1962, the United States has become the chief foreign arms supplier. The U.S. Foreign Military Sales Program with Israel ranks first in loans and grants, third in deliveries and fourth in agreements. The arms relationship with the U.S. was solidified by the Mutual Defense Assistance Act of 1949. An amendment in 1952 specifies that equipment provided will be used "solely to maintain legitimate self-defense" needs.

Great Britain and West Germany continue to furnish hardware on a lesser scale, as does France. Foreign military assistance in 1982 totalled $1.5 billion (U.S.). Of note, the arsenal also includes a stockpile of captured Soviet equipment including 590 tanks.

7. Military Manpower Resources

The military maintains a force level totalling 172 thousand regular troops plus over 120 thousand conscripts. Mobilization of all first and second echelon reserves would bring the total of men in arms to well over 500 thousand, of whom 100 thousand could potentially be activated within twenty-four hours of alert. The combined reserve strength for all service elements stands in excess of 300 thousand.

The force currently maintains a presence of 10 thousand troops in Lebanon. The campaign there has provided experience, but this will increasingly be offset by the strain of protracted occupation and overtaxed logistics. The economy can ill afford the lengthy diversion of resources into heightened readiness and mobilization.

The demographic characteristics of the Israeli military establishment are likely to continue to change as a reflection of the evolving composition of the population at large. But as noted above, the military has established itself as an open institution well suited to the assimilation of Jews of all kinds and able to conduct recruiting and training functions accordingly. It will be some time before these developments reach the level of the officer corps--the Sabra of European origin--which remains homogeneous.

SYRIA

COUNTRY PROFILE

Centuries of foreign domination in Syria have produced one of the most heterogeneous societies in the region. This characteristic is, in part, a result of the historic, geographic and strategic importance of the country. Serving as the land bridge linking three continents, Syria's population contains centuries of immigrants from all over the area, bringing a multitude of ethnic, religious and intellectual traditions into the society. This diversity is the root of its instability and the dysfunction of its institutions, and is important in analyzing its contemporary dynamics, particularly military manpower.

During their occupation of the country from 1920 to 1946, the French used the "divide and rule" principle initiating the policy of minority group control over the dominant Sunni Muslim population most of whom had actively opposed foreign domination under the Ottoman and the French. During that period, the French established an armed force called "Troupes Speciales," which was to become the regular army at the time of independence. The French policy was to recruit primarily from minority groups, including Alawites, Druzes, Circassians and Kurds. By 1938, the force numbered 10,000 men and 306 officers primarily of rural minority origin.

At the time of independence, this armed force became the center of power and has sought to maintain this position ever since. There was never an attempt to involve the majority group in the process of establishing a nation or of participating in the development process, even though this sector represented the more skilled and educated class. In addition, the minority groups came predominantly from the rural areas of the country, while Sunni Muslims were primarily centered in the cities. This dichotomy continues to be important in the present regime's effort to maintain power.

This power structure has been the root of the instability of the country during the past 37 years: from the time of independence to Hafiz Asad's rise to power (1946 to 1970), the government suffered 21 successful coups and numerous other attempts. Although Asad has maintained formal control, his regime has been the cause and recipient of violence since 1970 and has had to depend upon an extensive network of internal security forces. The degree of repression used has undermined the legitimacy of the government and further divided the populace.

The entrance of the military into Syrian politics in 1946, the continual participation of the army through coups d'etat, and the dependence upon the military to defend the regime has given the military structure (including internal security forces) the supreme position of power in the country. In effect, 16% of the population establishes national policies and controls the

bureaucracy. The current composition of the population is as follows: ethnic groups include Arabs (90%), Kurds, Assyrians, Armenians, Jews and Circassians (10%); religious divisions include 74% Sunni Muslim, 16% Islamic heterodox sects, with 11% Alawite, 3.4% Druze, and 1.6% Isma'eli, and 10% Christian. This composition has remained more or less constant over time.

In spite of the Baathist ideology that calls for equality on the basis of pan-Arabism, the Alawite minority has been the central power since independence and occupies all positions of importance in the country. Although, the Party has, under their pressure, included some Sunni presence in its leadership and made concessions (such as a constitutional requirement that the head of state be Muslim), attention to the needs of the majority has been neglected.

The personal, ideological, generational, regional and sectarian cleavages in the society limit the potential of the population base, particularly in the allocation and effective use of military manpower. Syria has a more than sufficient supply of manpower to meet all civilian and military needs now and in the future. The key question is what happens to the pool. A high portion of the skilled and educated class migrates and the government encourages it to do so as a mechanism for expelling potential rivals. The inherent structure of the system frustrates the remaining sectors of the Sunni pool, underdeveloped and under-utilized. The essence of Syrian domestic and international policies emanates from the socio-cultural foundation. This weakness dictates the domestic policies of the government and establishes the boundaries of its foreign policies.

MANPOWER DETERMINANTS

1. Government Policies

The national security needs of Syria result from its geo-strategic position in the region and its radical political orientation. As a confrontation state against Israel, the country faces a major threat from a superior military power supported by the United States. As a member of the radical nationalist forces, Syria has been unwilling to negotiate a settlement with Israel for fear of further Israeli expansion and criticism from other radical Arab regimes.

The Soviet Union is heavily involved in Syria's military posture, and depends upon that relationship to maintain a presence in the Arab-Israeli conflict and in the region. However, the Soviets have not shown a willingness to extend their involvement to the degree necessary to tip the balance in favor of the Syrians. Such an action would lead to a direct confrontation with the United States, and would escalate the level of conflict.

The nature of the regime (its domestic instability and hard-line radical orientation) has national security policy implications domestically and regionally within the Arab countries. First, because of a lack of domestic support, the primary task of the government is to maintain power as mentioned earlier. Second, because of its radicalism, Syria has poor relations with all

Arab countries except Libya, and hostile relations with Iraq tilting strongly toward Iran. The resulting national security situation presents a paradox for the Syrian government. In one instance, because of domestic instability, the regime depends upon regional conflict to divert domestic dissatisfaction to external challenges. However, because of the weakness of the institutions in the country, Syria is not able to respond effectively to external challenges.

In order to overcome this contradiction, the regime attempts to maintain power through: (1) the use of domestic terror toward any perceived threat to the regime. (The total destruction of the city and the people of Hama demonstrates the extent to which the regime will go to ensure its survival. Houses and buildings were bombed and bulldozed by government forces. Reports do vary, though, and it is difficult to obtain an accurate assessment as the city was completely sealed off following the attack. On February 11, 1982, government security forces killed an estimated 30,000 men, women and children in retaliation for an attempted coup on February 6. 25 officers were executed and 175 were arrested in Damascus); (2) the allocation of the functions of power to selected Alawites in which the primary criterion for position is loyalty to the regime; and (3) repression, where major elements of the population are prevented access to the system.

The effect of these government policies is clear. The primary energy and resources of the system are turned inward in the interest of regime security. The internal security forces recruit personnel loyal to the regime at the expense of the regular military. In the face of external threat, regular defense forces are insecure, ill-equipped and often ambivalent toward the outcome: this in part accounts for the government's not regularly providing troops with live ammunition. In conflicts with Arab neighbors (Jordan, Iraq, and Lebanon), internal problems have undermined the military; domestic support has not been forthcoming.

2. The Population Base

Latest figures available indicate a total population of 9,793,000, an estimate which is consistent among sources. In comparison, Syria ranks 65th globally and 6th in total population among the 21 countries of the Arab League. The population is expected to grow at a steady rate through this century; growth estimates range between 3.2% and 3.7% annually. These estimates are based upon: (1) a gradual improvement in the life expectancy rate since 1960 which increased from 48 years to 57 years (some sources place the current rate as high as 65, the highest of all the Arab countries included in this study); (2) a constant birth rate of 46 per 1,000; and, (3) a decline in the infant mortality rate from 132 per 1,000 in 1960 to 62 per 1,000 in 1980. Based on these figures, a population of 14 million is projected by 1990 and 19 million by the year 2000. This estimate assumes a 4% growth rate from 1980 to 2000.

Of the current population of 9.7 million, 2.2 million are males between the ages of 15 and 49, and about 1.2 million are fit for service with an

additional 100,000 reaching age 19 annually. The present armed forces level is 175,000 men, leaving an ample pool of potential manpower.[1]

The age distribution is similar to most developing countries: 46% are below age 15, 50% are between the ages of 15 and 64 and 4% are over age 65. An increasing percentage of these people are located in urban areas as the country has experienced a 4.8 average annual rate of growth in urban sectors. Currently, 55% of the population are located in the two cities of Damascus and Aleppo.

3. Civilian Human Capital Development Programs

Health: Even though data are spotty, it is evident that Syrian health care and nutrition are only partially successful. According to the figures, moderate improvements have been made since 1960. Syria has the third highest life expectancy rate at birth among other Arab countries (Kuwait and Lebanon were higher) and the second highest of the countries in this study--65 years--just behind Israel's 72 years.

Syria's relative standing is not as high on other indicators, however. From 1960 to 1981, infant mortality per thousand declined from 132 to 60 in ages 0 to 1 and 29 to 14 in ages 1 to 4. Most recent estimates indicate that there were 2,510 people per physician and 3,810 people per nurse as late as 1979, and only 1 hospital bed per 980 people, the lowest of all the countries in the study though a minimal improvement over 1970 with 1,010 people per bed. By 1979, 75% of the population had access to safe water, and the total per capita caloric intake averaged 2,909 or 117% of the average requirement. The lack of improvements in the area of health care can be attributed, at least in part, to the lack of funds. The total percentage of the GNP devoted to health care declined from .6 in 1971 to .4 in 1977, going from 34 million dollars in 1976 to 29 million in 1977 (both constant 1977 dollars).

Education: Compared to other Arab countries, Syria has performed poorly in achieving educational goals. An increase in the literacy rate was achieved, from 30% in 1960 to 58% in 1983, and primary school enrollment increased from 65% in 1960 to 100% in 1980. In spite of these basic achievements, however, the performance of higher level educational goals is disappointing. Only 46% of the eligible school-age group was enrolled in secondary schools by 1980 and only 15% of the population between ages 20-24 was enrolled in higher education. Progress in the area of vocational training was even slower, as enrollment declined from 6% in 1960 to 4.6% in 1973. This performance is not surprising given the declining funds allocated to education since 1976; the percentage of the GNP devoted to education decreased from 6.1% to 3.1% during this time.

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[1] See Data Supplement Volume, Tables VI-4 and VI-5.

Since the Gulf countries' oil development effort began in the late 1960's, and particularly since the tremendous increase in oil revenues, Syrians have migrated to Gulf countries to serve in educational programs and other skilled positions.

4. National Human Resources

Syria is not a poor country when compared to the desperate situation of some of her neighbors. However, the country is highly dependent upon foreign aid. Syria ranks near the middle of the countries studied in per capita income ($1,735), just ahead of Iran, Jordan, Egypt, and Morocco.

Agriculture is the major sector of the economy as it continues to employ nearly 50% of the labor force, although that figure is disputed by a CIA estimate of 32%. Clearly, the percentage of labor in industry and services is increasing at the expense of the agricultural sector. Defense expenditures consume the major portion of the national economy, growing from 10.9% of the GNP in 1972 to 17.3% in 1980, and taking 47.7% of government expenditures in 1980, as compared to 37.2% in 1972.

Although reliable figures are not available, Syria receives considerable aid from Gulf countries as a subsidy for its role as a confrontation country. Since 1976, Syria has received modest amounts of development assistance from the United States though the U.S. Congress terminated all such assistance in the fall of 1983.

5. Civilian Versus Military Opportunities

Depending upon one's family background, political persuasion, and direction of loyalty, military service can be attractive. Most of the manpower needs of the military are met through conscription, however. All males between the ages of 19 and 45 must serve for 30 months, with subsequent active reserve for 18 years. To eliminate potential threats to the regime, the government does not induct those who are classified as political risks, nor are they accepted as volunteers or admitted to military academies.

Medical officers are given direct commissions after short periods of military training. Engineers and other highly trained technical personnel are recruited directly as NCOs. People in these categories are granted high salaries and other privileges so that the military can compete with the private sector. Officers and NCOs are given separate accomodations, including family housing, medical care, 30 days annual leave, retirement, and a wide range of financial supplements. Even for the regular serviceman, food, pay and quarters compare favorably to the private sector.

In spite of the need for highly skilled personnel, inducted personnel who have had encounters with internal security forces are transferred to civilian jobs after their period of basic training. The purpose of this policy is to prevent collusion within higher ranking personnel. There are also widespread complaints among Sunnis who have passed through the system and are active officers but not promoted nor given duties equal to their rank.

An important factor in measuring the attractiveness of the military is the public's general attitude toward authority. Although the military is the central power in the country, and in terms of benefits is an attractive career alternative, the military's poor performance record offers little enticement: most jobs in the bureaucracy are better and more secure than in the civilian sector. Further, the blatant discrimination throughout the services gives little motivation for achievement.

The relatively poor economic climate frustrates the civilian sector. Therefore, little competition for personnel is present between the military or the bureaucracy and the civilian industries. All sectors suffer from a lack of skilled manpower, especially as the level of technical expertise increases. As the Soviet Union upgrades the military equipment and arms it supplies, the shortage of technically qualified personnel will become more acute.

The major area of competition comes from the growing internal security and intelligence forces. There are at least 5 separate intelligence forces, including the "Special Forces" composed of 15,000 men, and the "Detachments for the Defense of the Regime" of division strength commanded by Rifat Asad. These forces are selected on the basis of their loyalty to the regime. They are given freedom and power and in most instances, have authority over regular military officers of higher rank than themselves. The major criterion for recruitment in these forces is loyalty; thus qualified personnel are drawn away from the ranks of the regular armed forces.

Although many qualified personnel are alienated from the system, the pool continues to be large enough to meet manpower needs. The major potential problem is that its split direction will compromise the effectiveness of the armed forces--internal and external.

6. Military Training

Army officers take a 2-year course at the Military Academy at Homs or Aleppo, after which they may be sent to other specialized training courses in Syria or in foreign programs in the Soviet Union or Eastern Europe. The Air Force Academy has a 2-year training program at Nayrab Air Base in theoretical, technical and scientific subjects and basic flight training. The Naval Academy at Latakia has a similar 2-year course.

General military training is started in secondary schools. Students attend compulsory weekly sessions and summer training camps. Practical examinations in military science follow these courses.

Generally, the standard of training in the Syrian army is good and has become more independent of Soviet training assistance, except for highly technical areas.

Since 1945, the Syrian army has been involved in 4 major wars with Israel, continual border clashes with Israel and Iraq, large-scale military interventions in Jordan and Lebanon, and the constant policing of its population and military. Certainly the experience of these confrontations provides Syrian

soldiers with on-the-job training which most other forces around the world do not have. Other than during the 1973 war against Israel, the Syrian military performance has been remarkably poor--particularly in light of the funds allocated to defense. Figures indicate that 56% of the budget was allocated to defense in 1983, $2.6 billion out of $4.6 billion.

Since the mid-1950s, the Soviet Union has been the main supplier of military arms and training to Syria, particularly since the neo Ba'ath coup of 1966 and the Egyptian expulsion of Soviet personnel in 1972. The dependence of Syria on Soviet military assistance was apparent during the 1973 war with Israel. During a 13 day period, the Soviets airlifted 3750 tons of military equipment and a greater amount by sea. Following the conclusion of the war, the Soviets resupplied all of Syria's heavy equipment losses. In fact, with replacement, Syria was able to attain new, more sophisticated equipment. The Soviet Union has continued that level of support through the present, and has met Syrian needs in Lebanon.

In 1973, the total amount allocated to arms imports rose to $1.3 billion. Since that time, the amount has fluctuated from a low of $380 million in 1975 to $825 million in 1974 and 1978.

The bulk of Syria's arms come from the Soviet Union. The continuing need for spare parts and training has accentuated that dependent relationship. However, in recent years, Syria has acquired missiles and aircraft from France and Italy, and equipment from the United States, Germany and Austria.

The Soviet Union has also been involved in Syrian military training programs. The result of this training has been a lack of innovation and flexibility on tactical issues and command procedures. For example, in the 1973 war--their best performance--the Syrian army suffered extremely high losses in equipment, 600km of territory, and over half its fighting force.

7. Military Manpower Resources

The poor performance of the military results from a number of factors which operate at both the macro- and micro-levels. One major aspect is the failure of the system to install quality leadership and organizational skill. The system also inhibits freedom of expression, thought, and action, which deprives itself of the flexibility needed for performance under pressure.

Moreover, Syrian involvement in Lebanon has caused severe morale problems among the forces deployed there. To counteract the discontent caused by other Muslims and Arabs, the major burden of fighting has been transferred to the elite Special Forces, a unit with absolute loyalty to the regime. Roughly, Syria has suffered 1,000 casualties annually since 1977.

JORDAN

COUNTRY PROFILE

Jordan is the smallest among the Arab states: in land only 37,738 square miles and in population only 3.4 million people. The country is poor in natural resources and, except for a short coastline on the Gulf of Aqaba, it is landlocked and 88% desert. Unlike some of the other desert lands in the area, Jordan is without oil. This lack of indigenous resources is a major factor in its overall development process; Jordan relies upon the U.S. and oil-rich Arab countries for much that it does not have.

Besides its dependence on foreign aid, two factors dictate the military manpower situation of the country. The first stems from Jordan's creation by Britain following the end of the British mandate in Transjordan in 1946. In return for the Sharif of Mecca's role in opposing the Ottoman Empire in World War I, Britain supported the Hashimite Dynasty's extension of control over certain territories, including Jordan. King Abdullah, the first ruler, was able to consolidate power because of support he gained from local Bedouin tribes who had links to the Bedouin tribes of the Hejaz (in the Arabian Peninsula) and those who accompanied him to Jordan. This family continues to rule Jordan. Dominated by loyal Bedouins, the military has assumed the role of protecting the monarchy. Bedouin forces give total allegiance to the King, based upon his Islamic, Bedouin and Arab heritage.

The second factor is reliance upon mostly urban Palestinians for skilled manpower. They have no particular allegiance to the preservation of the monarchy. The government's challenge is to balance its security needs with its dependence on the skilled manpower pool.

Even though various minority groups are present in the country--Armenian, Circassian and Arab Christian--ethnic or religious conflict is not a problem. There is little evidence of tribal or Islamic-fundamentalist discontent; Bedouins and tribal leaders are among the King's strongest allies. In fact, many representatives of minority groups participate in the government.

Apart from Israel, Arab nationalism is the major threat to the country today (as well as to other traditional Arab countries, such as Saudi Arabia). The Palestinians support the nationalist movement, although they have not attempted to directly confront Jordan since the 1970-71 Civil War.

Diplomatic success has been one of Jordan's key attributes as a monarchial regime. King Hussein's proven ability to survive through cautious and pragmatic policies has insured the longevity of the monarchy though Jordan's dependence upon foregin sources of financial and military aid has made it vulnerable to external forces.

MANPOWER DETERMINANTS

1. Government Policies

Jordan plays a unique role in regional and international politics. First, the conservative monarchial regime identifies with other conservative Arab states, such as Saudi Arabia, Kuwait, the United Arab Emirates, and Morocco. The government depends upon these states for political support and receives extensive economic aid from oil-rich Gulf states. King Hussein also depends upon support from the traditional Bedouin tribes who are attached to him through his Hashemite lineage dating back to Prophet Muhammed. Maintaining their loyalty is a fundamental requirement for the stability of the regime.

Second, because of Jordan's proximity to Israel and the large number of Palestinian (65% of the population) inhabitants, the government is forced to act cautiously vis-a-vis the Arab-Israeli conflict. Although defense expenditures exact a high cost in terms of human and capital resources at the expense of development efforts, Hussein has limited options. Hussein would like to reach a peace agreement with Israel; however, his first requirement is that it be founded upon the establishment of a Palestinian state.

Third, Jordan has deep ties to the West, particularly the United States. King Hussein is western educated, married to an American, and has grown up surrounded by western advisors (mostly British) since he assumed the throne. His development schemes are more openly oriented toward westernization than many of the other conservative Arab states, who are attempting to modernize without westernizing. Hussein has established an open market economy and encourages private enterprise. The country is also very dependent upon western economic and military aid. Since Jordan has no significant natural resources and an acute defensive capability requirement, the U.S. plays a central role in national and military development efforts.

The interplay of these three roles determine national goals and strategies. As a small state which is resource poor, geographically land-locked (with the exception of the Gulf of Aquaba) and subject to potential internal and external threats, its policy options are limited. Nevertheless, King Hussein is adept both at playing Arab politics; and by virtue of Jordan's regional political role and geographic disposition, maximizing his negotiating posture with the extra-regional powers.

The unique position of Jordan makes it a pivotal country in several corners--the Israeli-Arab conflict, the stability of pro-Western Arab governments, and the American presence and influence in the region. King Hussein is the central figure in the multi-level role play. The maneuverability of the government within these different contexts can be solely attributed to his presence and skill.

2. The Population Base

Jordan's population of 4,346,000 is less than any other country in the study though it is largely made up of Palestinian immigrants. In 1946, the population of the East Bank was estimated at about 500,000 people, most of

whom had tribal and rural backgrounds. By 1983, its population of 3,436,000 was at least 65% of Palestinian origin and 60% urban dwellers. Given a current 3.7% growth rate--one of the three highest in the study--the population should reach 5 million by 1990 and 7 million by the year 2000. The age structure in the country is similar to that of all the other Arab countries in the study. Given the country's limited economic resources, population growth will increasingly burden the system and may frustrate development gains.

To date, the country has placed great emphasis on its military. Despite its small population it has an army of 67,000--larger than the Libyan or Saudi Arabian.[1] 2.5% of its population serves in the military, a figure which is matched only by Syria and Israel. Morever, it has been estimated that one-quarter of the economy depends directly or indirectly upon military expenditures.

There are currently about 775,000 males between the ages of 15 and 49. Of these, 546,000 are fit for service and an additional 38,000 reach the age of 18 annually. Thus, there is an adequate military manpower pool, particularly in light of the limited economic resources.

3. Civilian Human Capital Development Programs

Jordan's lack of domestic natural resources is a major limitation on the country's ability to improve the standard of living. In spite of impressive gains in domestic economic development in the 1970s, current per capita income stands at $1,315, just above Morocco and Egypt. Even support of the national budget requires aid from other Arab governments though the country has been able to match gains achieved by other Arab countries in education and health.

Health: Water shortages and sanitary problems contribute to health problems in the country. Only 56% of the population has access to safe water, the second lowest in the study, just above Morocco.

Significant improvements have been made, however, in the numbers of medically trained personnel. A decline in the population per physician was achieved from 1960 to 1980 (5,800 to 1,890), ranking the country sixth in the study. In nursing staff, the country ranks fifth, with 1,310 people per nurse in 1980.

Life expectancy at birth has improved from 47 in 1960 to 62 in 1981, which places Jordan just behind Israel and Syria.

Education: The current adult literacy rate is around 59%, although government sources place it as high as 70%. Both rates put it above all Arab countries and second to Israel in this study.

Jordan ranks third in the percentage enrolled in primary schools (98%), second in the percentage enrolled in secondary schools (79%) and first in the

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1 See Data Supplement Volume, Tables VI-4 and VI-5.

percentage enrolled in higher education (27%), even ahead of Israel. This structure gives the country a larger base of more highly skilled manpower. Although the percentage of the GNP devoted to education has declined since 1974, the total dollar amount has increased.

On-the-job training is an important determinant of Jordanian skill level, and both military and industrial sectors participate in this process. As a result, the country has experienced dramatic changes in the structure of production in the past two decades with increased participation in services (in 1980, 60% of the population--the highest in the study) compared with 20% in both industry and agriculture. The dramatic impact of the educational system is clear.

4. National Human Resources

The qualitative standard of Jordanian manpower is relatively high, although because of more attractive opportunities, many skilled Jordanians migrate to Arab countries of the Gulf. This migration has been a problem for Jordan in the past and is critical in certain sectors, but as Gulf states rapidly improve their own pool of skilled manpower, they will likely reduce their use of expatriate labor. In this instance, Jordan's leaders must create productive opportunities to absorb their own skilled labor.

5. Civilian Versus Military Opportunities

This emigration has created critical shortages of skilled manpower for the military. To limit the impact, the government instituted compulsory military service in 1976. Now all males between the ages of 19 and 40 are required to do two years' duty; 3,500 are drafted annually. The allocation process is selective and aims at inducting the technically qualified personnel it could not attract on a voluntary basis.

The military prefers volunteers with a traditionally conservative Bedouin tribal background and recruitment procedures continue to include political screening. The benefits in pay and allowance offered enlisted personnel have historically been the highest among the states in the region, although oil states now offer their personnel more attractive packages. Additionally, as the Jordanian military enjoys a high level of prestige, it offers an attractive employment opportunity. Military pay, however, does not compete adequately with the civilian sector.

The pool of manpower is more than sufficient to meet the needs of the entire country, although shortages of particular skills are present in both military and civilian sectors. This deficiency is expected to continue given the increasing level of skill that advanced technology requires.

6. Military Training

Army and Air Force officers are trained at the Military Academy for two years. Upon graduation, large numbers--including pilots--are sent to military schools and academies overseas for special training, primarily in the U.S. and

Britain. Air Force pilots are trained at the Royal Jordanian Air Academy, a respected institution.

The expertise of Jordanian forces is in demand. It has furnished a number of Gulf countries with training missions and operates a training force with the Pakistani Army. These efforts are not formally coordinated in any way.

The Jordanian military has earned an excellent reputation for efficiency and effectiveness, although its combat performance has never matched its reputation. In the 1948 conflict with Israel, it was the strongest Arab contingent, holding the West Bank and East Jerusalem. The country's 1967 territorial loss was the result of a weak air defense system and bad logistics rather than ineffective combat operations. In 1973, Jordan lost a fourth of its forces assisting Syria in the Golan Heights. These losses were primarily attributable to inadequate Syrian and Iraqi military support.

The military's ability to furnish internal defense is even more effective, as demonstrated during the 1970-71 conflict with the PLO. But since the civil war ended and the radical Palestinian presence inside Jordan diminished, the internal military security role has been less crucial. King Hussein also enjoys wider support outside the country, the product of his skillful diplomatic abilities (in spite of political problems with Syria).

In comparison to its neighbors, Jordan has made few arms purchases. In 1978, Jordan's arms imports totalled only $91 million, which was 19% of Israel's total and 5% of Syria's. Between 1975 and 1979, Jordan imported $600 million worth of arms, compared to $4.5 billion by Syria and $4.2 billion by Israel. Nevertheless, Jordan is totally dependent upon foreign sources--primarily the United States--for military aid and upon the Arab Gulf states for economic aid. However, the degree of dependence does not stop here. Jordan is also dependent upon the United States for parts and technical assistance. In an era where military electronics determine weapons' effectiveness, Jordan needs Western technology to regularly update its avionics, electronics, software, training and operational doctrine.

7. Military Manpower Resources

Given the likely requirements of the Jordanian Army in the foreseeable future, its current quantitative and qualitative manpower resources are sufficient to meet its needs.

Internal security needs are well met by the army's Bedouin sector, that have proven to be an effective fighting force. It is both loyal and can become very effective with training. The performance of the country in the area of education and training has been excellent and with continued improvements, will help mitigate the shortages of skilled manpower in the future. Similarly, the high utilization of expatriate labor in the Gulf has peaked, and can be expected to decline in the next decade. The result should be a net increase in the military manpower pool.

SAUDI ARABIA

COUNTRY PROFILE

The special relationship enjoyed by Washington and the ruling family in Riyadh is founded on the mutually-beneficial joint exploitation of Saudi Arabia's petroleum resources, dating to the first oil concession granted to Standard Oil of California by King Abd al Aziz in 1933, and upon the American displacement of the British security posture east of Suez since 1968. Out of this harmonious accord has developed a preeminent U.S. role in the provision of developmental assistance, especially subsequent to Faisal's ascendancy to the throne in 1964 and particularly in the military sector. For the key tenets of Saudi foreign policy--military superiority on the Arabian peninsula, support of moderate Arab interests and unity (including Palestinian rights), anti-communism, and favorable commercial relations with the oil-consuming states of the West--buttress U.S. objectives in the region and ensure for the foreseeable future a strong American interest in the maintenance of a viable Saudi military capability and continued U.S. political support to the reigning House of Saud.

Saudi Arabia dominates the Arabian Peninsula, and from this promontory overlooks the strategic waterways which are the economic lifelines of the industrialized nations and through which pass twenty percent of the oil bound for Western Europe and the United States. Its sparsely settled population (estimated at approximately eight million) is rooted in the tribal customs of the nomadic Bedouin and conservative Wahhabi Islam. Power, prestige and authority lie largely in the hands of the several thousand descendants of Abdal Aziz, who unified the Kingdom sixty years ago. The country boasts the world's largest proven oil reserves and it is this fact, translated into a surplus of petrodollars far exceeding the economy's absorptive capacity, that has engendered the ambitious development plan, investment abroad, and improvements in infrastructure of equivalent magnitude.

MANPOWER DETERMINANTS

1. Government Policies

The modern elements of the Saudi armed forces are patterned after the United States military and nearly approximate the U.S. in the technological quality of its hardware; and yet the Saudi military capability is defensive at best. Notwithstanding the expenditure of over ninety billion dollars for defense over the last decade (far in excess of the per capita spending of any other Arab country), these forces possess little projection capability, are a generation away from being able to provide an indigenous supply, logistics and maintenance capability; and are likely to remain heavily reliant upon foreign training and supply for many years. (The air force is particularly dependant

upon U.S. ground support and logistical backup). These factors are compounded by the efforts of the regime to thwart the emergence within the military establishment of a rival political power center (particularly the air force). These shortcomings of the military system certainly inhibit development potential and call into question the Saudi commitment to the creation of a modern military based on the Western model. With these caveats attached, the program to modernize the Saudi armed forces is proceeding on a scale comparable in this region only to Israel and pre-revolutionary Iran and at a rate which has strained (some would argue exceeded) the absorptive capacity of the military sector and the society as a whole.

The structure of the modern elements of Saudi armed forces, as noted above, has been patterned after that of the American military, the most influential external source of assistance and example. These services comprise:

- the regular army, enjoying wide conscription and based in four military cities;
- the tribally-based national guard (SANG), which balances the army in size and political significance and acts as protector of the royal family and guardian of the Eastern Province oil fields;
- the air force, possessing an almost purely defensive capability; and
- the relatively new navy which lacks a blue water capability but must, nonetheless, uphold the vital mission of preserving passage through strategic sea lanes of communication--chokepoints for the flow of oil.

Riyadh participates in the Gulf Cooperation Council and has been the principal force behind the integration of the air-defense of the Southern Gulf: the Saudis have provided considerable aid for this purpose to Oman and Qatar. There are no Saudi military units deployed abroad, although the air force shares a Saudi-constructed base in Bahrain. The only known military commitment provides for Jordanian access to northern air bases in the event of renewed open confrontation with Israel.

In addition to its role as defender of the regime (i.e., the royal family) against sources of internal threat, the military establishment is configured to meet an array of perceived external threats to the nation's security and vital interests. The regime is likely to continue, through the period being examined, to perceive these potential sources of external threat to emanate from Ethiopia & South Yemen, Iran Iraq, and Israel. The major tenets of Saudi national security policy are likely to continue, through this period, to be conceived to be first the preservation of territorial integrity and then:

- continuing the Saudi role as protector of the holy places of Islam;
- asserting Riyadh's influence as a moderating force in inter-Arab politics;
- exploitation of financial wealth to influence other Arab countries through grants and aid, and to exert influence on the Western powers;

- maintenance of a close relationship with the U.S. (tempered by U.S. ties to Israel); and

- the development of the military for symbolic reasons.

These policies shall increasingly come to be administered by the younger among the royal family members, who are expected to be less inclined to follow the U.S. lead in foreign policy decision-making.

2. The Population Base

Population estimates vary between 4 and 12 million: the actual figure probably falls between 5 and 8 million, with a declining average growth rate. The population is expected to reach 12 million in 1990 and 15 million at the turn of the century according to high mark estimates. Urbanization has doubled in two decades, concomitant with the dismantling of the nomadic tribal society.

Highlighting the population related concerns are the proportions of total population represented by the royal family and by immigrants: both ratios hold the key to the stable maintenance of the regime and the preservation of internal stability. Family members are estimated to number only several hundred thousand.

The resident alien population presently numbers four million and is increasing, to the extent that hardly half the work force is Saudi. The regime is especially sensitive to the presence of almost 140,000 Palestinians.

3. Civilian Human Capital Development Programs

Health: The country is experiencing rapid improvements in access to qualified medical care, life expectancy, and nutritional standards; with large and increasing social expenditures in these areas.

Education: School enrollment has increased six-fold in two decades, yet the literacy rate remains only 17 percent (compared to 3 percent in 1960).

4. National Human Resources

In 1980, 52 percent of the population was of working age (15-64 years). Uniformed military service accounts for 7 percent of native manpower.

5. Civilian Versus Military Opportunities

Service in the Saudi armed forces is voluntary, with the exception of the National Guard, for which customary tribal levies produce many new recruits. The lack of compulsion for recruitment exacerbates competition for skilled labor with the private sector. The military offers excellent medical and social services, quality housing, an educational system superior to the public education programs, and relatively high pay--all as incentives for military service. Saudi militiamen are the highest paid of any troops in the Middle East, and their salaries are supplemented by living, housing, clothing, and

servant allowances. Officers receive forty-five days of regular leave annually, and are eligible after fifteen years of service for retirement under generous provisions.

Pay in the armed services has increased (military salaries for all ranks were doubled in late 1977) and is the highest among the public sector opportunities, but still rates considerably below the earning potential afforded skilled manpower in the private sector.

The opportunities open to educated and motivated young Saudis in the civilian sector are vast, lucrative, and attractive; and it is largely for this reason that manpower levels for all three services remain below authorized strength. For these Saudis, the discipline, lesser comfort, lower pay, and special privileges accorded royal family members of the armed services are disincentives for enlistment. Nonetheless, seven percent of the labor force is in active military service: a high proportion in the context of the critical skilled labor shortage and the wholesale importation of foreign workers.

It is estimated that there are roughly one and one-half million men of military-eligible age among the general population. Military service is voluntary and open to all male citizens (or those naturalized for at least five years) who are over eighteen years of age. The regular armed forces recruit on a nationwide basis, and units have no territorial links in origin or deployment. The national guard is tribally-based and recruits from specific locations. Its recruits enlist for a three year tour of duty.

A large proportion of officer candidates are drawn from military preparatory schools located in the larger cities: these institutions provide free instruction to qualified students who eventually graduate into the Royal Military College.

Saudi recruits are credited with possessing a strong aptitude for military service, but educated and skilled recruits remain in short supply. The competition with the civilian sector (which also suffers a dearth of native manpower) for trained workers is exacerbated by:

- the low average level of education of the Saudi population as a whole;
- the increasing demand for technically proficient specialists to function in a sophisticated hardware environment; and
- the gradual demise of the tribal society from which the military--particularly the National Guard--has traditionally drawn a high percentage of its recruits.

A shift of the recruitment base to the politically less homogeneous urban areas and away from the rural tribes, where support of the regime is long established, seems unlikely; hence dramatic changes in the recruitment patterns are not anticipated in the near term.

6. Military Training

Saudi Arabia is especially reliant upon direct foreign involvement in its military training programs. While efforts are underway to improve (often create) indigenous training capabilities, the large-scale tasking of personnel resources to training functions can only occur after the manpower pool can better fill with native labor the specialist and middle-rank positions in combat and support units.

The Royal Military College located in Riyadh is the chief source of junior officers for the Army. Its graduates are commissioned as second lieutenants at the completion of the three-year program there and confirmed in rank upon the conclusion of a two-year probation period. Air Force officers receive their instruction at the King Faisal Air Academy, also in Riyadh, with many graduates receiving additional training in the United States. Its program includes rigorous instruction in English, in which much of the subsequent training is conducted. Its graduates are commissioned as second-lieutenants also.

All Saudi naval officers and most of the enlisted ranks in the navy presently receive their training in this country: a national naval academy is under construction but not yet in operation. A military academy was recently completed at Khasam al-An to train officers for the national guard.

In addition to these programs, graduates of technical schools may obtain direct officers' commissions in the services. University graduates holding science degrees may also enter the military under preferential enlistment provisions.

The military academies, armed forces branch schools, and foreign training liaison programs are all administered by the Operations and Training Staff (G-3) of the Office of the General Staff.

Basic training for the regular army and the national guard is conducted by Saudi officers and NCOs. Virtually all subsequent and specialized instruction is contracted either to foreign armed forces or to private firms.

The U.S. Military Training Mission, with a staff of 250, oversees the work of approximately 30,000 Americans engaged in training, construction and logistics functions inside Saudi Arabia. Several hundred French military personnel and a small British Royal Air Force contingent are also present performing training duties.

Except for the minor skirmishes which broke out along the border with South Yemen in 1974-1976, scattered clashes with troops of North Yemen along that frontier during the early 1960's, and the participation of one Saudi battalion in the 1948 war, Saudi forces have had no active combat experience. This fact distinguishes Saudi Arabia from the other countries considered in this study, all of which have engaged in open combat operations in the recent past.

In-service training takes place in the various specialized branch schools: infantry, armor, artillery, communications, physical training, ordnance, engineering, military police and administration, nursing and music. The air force maintains a Technical Studies Institute as well.

Foreign assistance to Saudi Arabia is more physical than fiscal and takes the form of training, support, procurement, maintenance and logistics cooperation as described above. The heavy dependence upon these external sources of expertise is, as noted in the preceding discussion, a situation unlikely to change in the near future. As is the case in Israel and Iran, the creation of a modern military in Saudi Arabia possessing sophisticated hardware is largely the result of an impouring of foreign influence, technology and skilled manpower; and it is for this reason that foreign assistance in the development of the military ranks is perhaps the most significant variable in the analysis of this country's defense manpower.

7. Military Human Resources

The figures below depict the distribution among the services of the 52,000 Saudis currently in uniform:

Service	Personnel
Army	35,000
Navy	2,500
Air Force	14,000
Paramilitary (Total)	36,000
- National Guard	25,000
- Frontier Force and Coast Guard	8,500

There are an additional 10,000 foreign contract military personnel currently serving the Saudis' armed forces.

As noted previously, these forces are strained in their capacity to absorb the advanced weapons systems being procured: it is estimated that, were procurement to be frozen, the Saudi military would today be a decade away from being able to operate and maintain the present arsenal relying solely on native manpower. As already observed, continued competition with the civilian sector for skilled labor will exacerbate the personnel situation. The completion of large-scale construction projects (such as the military cities) will free defense funds now dedicated to infrastructure costs (currently 85-90 percent of the Saudi defense budgets) and enable the government to channel more monies into training, pay and enlistment incentives.

IRAN

COUNTRY PROFILE

Estimates of Iranian military capabilities and trends now and for the future are highly speculative at best. Indeed, all estimates on Iran are speculative. No reliable data have been available since the 1979 Revolution, and prior figures were distorted by the Shah's government. Even estimates of developments in Iran must be treated with skepticism. Both macro and micro methods of analysis support this conclusion. Outside observers are not alone in their inability to assess the direction of events in Iran: Iranians involved in the change and upheaval occurring in the country are also struggling for understanding and direction.

The primary obstacle to revitalizing the country is the present lack of a national consensus on policies and goals. This national breakdown goes beyond the problem manifested by the religious and ethnic divisions of the country, although these are important. The current national crisis, which erupted in 1979 but began under the Shah, is a product of psychic immobility rooted in the contradictions between external and internal cultures. The dysfunction of the society is a product of the breakdown of institutions, the denial of national consciousness, and the tensions inherent in the process of modernization which wide disparities existing in the population made acute. Although under the Shah Iran gave the appearance of modernity, it is now clear that those indicators were entirely superficial. In fact, modernity or the benefits of greater economic prosperity had not reached much of the population.

Iran is divided ethnically, ideologically, and religiously. The largest minority ethnic group in Iran is the Kurds, who number about 3 1/2 million. One of the primary sources of agitation for the government has been from the Baluchi population, which numbers about 600,000 and is related to a much larger group which extends into Pakistan and Afghanistan. Since Baluchis are Sunni Moslems, they have been one of the most economically depressed groups in Iran. (The Turkish speaking population is the next most significant ethnic group of which the Azerbaijanis are the most numberous. These and the Baluchis have been sources of tension for the government.)

The remaining ethnic divisions in Iran make the society very heterogeneous. Although the central government has been successful in maintaining control over these groups, they contribute to a confusing milieu of linguistic, cultural, and intellectual traditions. This diversity, complicated by the size of the population, has made national consensus difficult to achieve.

More important than the ethnic divisions are the ideological differences which exist between and among political and religious groups. The groups involved are: (1) the clergy and their followers who are divided between a more moderate secular group and the fundamentalists; (2) the Bazari or

traditional merchant class which has historically been a center of power in the society; (3) the Communists (the Tudeh Party) and the Muslim Marxists (called the Fedayan Al-Khalq), both of whom form the radical anti-Western and anti-capitalist camp; and (4) the modernized intellectual class which is more secular in orientation, but divided between pro-Western and pro-nationalist inclinations.

These forces joined together in deposing the Shah but since then have been unable to negotiate the nature of the new order. The fundamentalist religious group, through the power of Khomeini, has been able to maintain control at a cost: as Khomeini has consolidated his own power, he has also worked to undermine or remove his one-time allies.

MANPOWER DETERMINANTS

1. Government Policies

Since the Revolution Iran has been unable to establish a regular government which functions according to established norms and procedures. There are people in power, but there is no standardization to their actions and no structure to the decision-making process. The national objectives of the new regime have been to reorder the system and to export the new philosophy to other Islamic countries: tasks subordinated to the immediate priority of winning the war with Iraq.

The fundamental philosophy of the regime is to unite Muslims all over the world and to reconstitute one Islamic empire. The new society would live according to Islamic principles as defined by the fundamentalist clergy. The nonsecularized order poses a threat to the nation-state concept and the West: Khomeini is questioning the nature of the international system as being a product of Western tradition. As a religious leader some Shia Muslims feel obliged to follow Khomeini's commands until death, and they have.

The universality of his new order is also a threat to the governments of other Islamic countries, particularly conservative regimes such as in Saudi Arabia. The conflict with Iraq is, in part, a result of Khomeini's attempts to overthrow the secular Iraqi government.

Iraq has taken the offensive and has attacked Iran in an effort to ensure that the Islamic revolution does not cross its borders and to use the weakened state of Iran to regain concessions made during the 1975 agreement on the Shatt-al Arab waterway. Iran's performance has surprised everyone, including Saddam Hussein. Although the economic and human costs to Iran have been tremendous, the external threat gave the population a cause around which to rally allowing the government to consolidate its forces and provide a channel in which to divert domestic tensions.

The eventual outcome of the conflict is uncertain. In the long term, the result is less crucial to the overall position of Iran than Iraq. Although Iran may suffer more losses, its population base is greater and its natural resources and economic base are stronger. It is for this reason that Iran

could afford to settle into a war of attrition against Iraq, while Iraq is hard pressed to maintain a continued state of war. While the war continues to consume Iranian attention and resources, it is doubtful that the Khomeini regime will attempt to export its revolution by invading other Arab Gulf states. Indeed, this was probably the primary reason why some Arab states have supported Iraq's efforts.

2. The Population Base

Current estimates place Iran's population at 42.5 million, second only to Egypt in this study. The current and projected population growth through the year 2000 is 3.2%--54 million by 1990 and 72 million by 2000. The population distribution is similar to most Third World countries; 46% are under 14, 51% are between 15 and 64 an 3% are over 65. The country experienced a high rate of urbanization in the 1960's (7.1%), second only to Algeria. However, this rate has decreased to about 5%.

3. Civilian Human Capital Development Programs

Education: The adult literacy rate is currently cited at around 50%, and if accurate, up only 16% during the Shah's reign. The percentage of the appropriate age group enrolled in primary school is said to be 100, secondary school is said to be 44, and higher education 5. Under the Shah, thousands of Iranian students were enrolled in universities in the U.S.: since the revolution, this number has been drastically reduced. After Israel (44%) and Egypt (18%), Iran (7%) has the next highest percentage enrollment in vocational training.

Since the Revolution and the increased influence of the ulema, the trend in education has been to revert back to traditional religious forms of teaching.

Health: Life expectancy ranges between 52 and 58 years. Only 51% of the population has access to safe water. Iran ranks seventh in population per physician (2,570), per nurse (1,910), and per hospital bed (650). The percentage of caloric requirements available was 98 in 1979. In many rural sectors, food supply is highly seasonal. Recent estimates of health expenditures are not available.

4. National Human Resources

Iran is rich in human resources, but faces a crisis within the institutions which work to guide the development and welfare of the population. This is not to suggest that the country is not functioning at all. Iran surprised many observers who thought the entire country would collapse after the revolution. That the country continues to function, particularly in light of a war with Iraq, attests to the determination and strength of the people. However, the gains in development which had been achieved under the Shah have been halted. More important, the conditions conducive to creativity and innovation are absent. The current radicalism and fundamentalism of the regime has

dislocated the modernized and intellectual members of the society who are best capable of tackling the country's pressing social and economic problems. Iran also suffers from unemployment and underemployment.

The regular armed forces are estimated at about 250,000 -- the second largest force in the study. There are currently about 9.8 million males between 15 and 49, with 6 million fit for service. An additional 422,000 reach age 21 annually. Estimates cited above are speculative. The regular military has been in disarray since the revolution. Little is known about the numbers and organization of the Revolutionary Guard comprising the major thrust of the Revolution and a major force against the Iraqis.

However, the pool of manpower is more than adequate to meet military and civilian needs.

5. Civilian Versus Military Opportunities

The current composition of the military is unclear. Estimates indicate that at least 50% of the higher ranking officers were either executed or fled the country during the Revolution. However, after the attack by Iraq, the military was able to reconstitute itself and performed surprisingly well against its adversary. After 3 years, Iran has repelled Iraqi forces from its soil and has captured some Iraqi territory, but this has been achieved at very high human cost. Iranian losses are as high as 250,000 dead and even more wounded. Although Iranians were quick to enlist to fight, evidence now indicates that very high losses are encouraging desertions, failures to register, and discontent among the officers.

Thousands of Iranian soldiers have enabled Iran to achieve the victories scored thus far. The decisive battles have been won in hand-to-hand combat. Invoking the Islamic tradition of martyrdom, the government recruits people off the streets willing to die for the cause. The fighting force has come to be known as the "Army of Twenty Million," a term which reflects the determination of the population to defeat Iraq. Presumably, the population base of Iran is large enough to overwhelm the enemy in numbers. In light of the current rate of desertion, however, it is doubtful that Iranians will continue to support this effort.

Given the high rates of unemployment (about 3 to 4 million out of a work force of 11.5 million) and a large population base, the civilian sector is not an important source of competition for the military though there has been and continues to be a shortage of skilled manpower. It is alleged that since the Revolution, about 2 to 2 1/2 million people (mostly professionals and persons with special skills) have fled the country. This figure is highly speculative. Whatever the exact number, Iran's available trained manpower has been drastically reduced. The industrial sector--particularly the oil industry--has targeted the skilled pool. If the country is to ever recover economically from the devastation of the previous 4 years, it will need to rapidly increase its facilities for modern technical education and find a way to allocate skilled manpower more effectively.

6. Military Training

During the Shah's reign, U.S. military advisors assumed the responsibility for training. Reliable information on the current state of training programs is not available, although it is doubtful that they are functioning effectively. Given the immediacy of the war with Iraq, there have been few additional resources available to devote to training. Moreover, personnel necessary for advanced training are not present.

In the past three years, the war with Iraq has given Iranian military forces combat experience. But Iranian forces have repelled Iraqi forces--not achieved a victory. This limited success should be attributed to Iran's having sacrificed thousands of soldiers and not to its greater fighting capability. Further, the experience gained during this conflict has not added to the armed forces' overall capability.

It is unclear who presently furnishes Iran with economic assistance. Although the production of oil has increased this past year, overall industrial production is down 40%. Clearly, the country needs aid to resupply its inventory of arms and equipment. Speculation on the sources of Iranian arms supply abound: some suggest that Israeli sources are a conduit for U.S. arms and spare parts, via Canada, Britain and South Korea. Other sources have been tapped, including the Soviet Union, Syria, Italy, Hong Kong, Singapore, Holland, Austria, Switzerland and Libya. In spite of Iran's nationalistic actions, it will continue to depend upon foreign military aid for sometime.

7. Military Human Capital Resources

Projections of Iran's military capabilities now and in the future are based upon inadequate or unavailable information. However, it is clear that the Revolution destroyed the modern military the Shah built, and the conflict with Iraq has denied the remaining forces the time needed for rebuilding. The Revolutionary Guard has assumed a high share of the responsibility for defending the regime, and all information suggests that this unit is composed of untrained and ill-equipped volunteers. Although the military has received arms and equipment from numerous outside sources, no foreign training assistance has occurred: the nature of the regime and the current state of conflict preclude this possibility.

The country has an adequate pool of manpower, but were the military to rebuild itself, it will need a greater degree of autonomy and leadership than it currently enjoys.

IRAQ

COUNTRY PROFILE

Iraq's borders are the product of war and diplomacy. With the exception of the eastern border of the Tigris-Euphrates river valleys, there are no other natural features to define the country's current borders. The victors of World War I created the contemporary state and carved it from the defeated Ottoman Empire giving it to the United Kingdom as a mandate. This history has profoundly shaped the country's demographic composition, strategic disposition and security requirements. It is a country made up of diverse ethnic groups: a nation of nations. Also, as subsequent governments feel no obligation to honor previous agreements, long standing border disputes continue to resurface. These disputes, combined with the Iraqis' quest to reconstitute under their leadership the once great Islamic empire, are the basis of its contemporary conflicts.

The interplay between these two factors has given Iraq the much deserved reputation of being one of the most violent countries in the world. This reputation, although centuries old, continues to remain applicable. The current regime is a ruthless dictatorship, whose national policies are based upon two major objectives. The first is to maintain power, a considerable accomplishment given the number of internal divisions. Although 95% of the population is Muslim, it is divided between Sunni Islam (40%) and Shia Islam (55%), which gives Iraq a Shia majority. (The only other Arab country with a Shia majority is Bahrain, with a total population of 380,000.) The remaining 5% are Christian or other. Superimposed upon this picture are ethnic divisions, which cut across religious lines. About 70% of the population is Arab, 20% Kurd, and the remainder are Turks and Persians. The major cleavages fall between: (1) the Sunni minority and the Shia majority; and (2) the Kurdish minority (all of whom are also part of the Sunni minority) and the Arab majority (who are also divided religiously). Additionally Persians agitate; because many of the holy cities of Shia Islam are located in Iraq, they have settled near those cities. The society is further stratified by socio-economic status. Although Sunni Arabs are a minority (only about 20-25% of the population), they have been the dominant power historically. This has resulted in the economic and political repression of Kurdish and Shia groups.

Sunni Arab dominance should not disguise the divisions within that group along family, communal or tribal lines. Structures of power are based upon alliances formed between military officers and civilians, who are linked by ties of blood or locality. The current power force in the regime is referred to as the "Tikriti gang." Al-Tikriti is a small town of 30,000 located 100 miles north of Baghdad. It is the birthplace of former President Ahmed Al-Bakr, who ruled Iraq from 1968 to 1979, and the current President Saddam Hussein, who assumed power in 1979 and who had been the strong man of the Baath Party during the previous administration. Al-Bakr took power with loyal

followers from his home town. Hussein continued in the same tradition, purging the Revolutionary Command Council of Baathist military officers and replacing them with civilians from Al-Tikriti.

In order to maintain power in the midst of this diversity, Iraqi governments have depended upon dictatorial repression and torture to control a discontented population. The government must have military support to maintain order.

The war with Iran currently consumes Iraq's economic, human and national resources. Following the Shah of Iran's removal and the rise to power of Ayatollah Khomeini, Iran sought to depose Saddam Hussein's government using the Iraqi Shia population. Ideologically, Khomeini felt that the Islamic Revolution had no national boundaries as it includes all Muslims. One of his objectives was to free Shia Muslims in Iraq from the control of an atheistic secular government. As various factions of the population became more susceptible to Iranian subversion, Hussein decided to take the offensive, and to correct some long standing problems with Iran in the process. One of Hussein's major objectives was to regain control of the Shaat al-Arab waterway, settling a dispute over the 1975 agreement with Iran which he felt the Shah had imposed upon Iraq with the aid of the United States. Hussein launched an attack on Iran in September 1980. His campaign was economically possible because of surplus revenues from oil exports, and probably because of the assurance, or expectation, of financial grants from other Arab Gulf states.

In light of the tremendous losses resulting from the war with Iran and the activities of the internal security forces, many observers have asked how Hussein has been able to maintain power. The answer often cited is twofold: that Hussein controls the major source of power in the society--the military--but more importantly, that his public charisma wins the support of many among the masses.

MANPOWER DETERMINANTS

1. Government Policies

Iraq is a country with an important geopolitical position and a desire to lead the Arab world. Both of these factors have historical foundation and influence the contemporary position of the leadership. The Baath Party is the instrument of Arab nationalism and socialism. Therefore, the state plays a controlling role and is the major force for social, economic, and political development.

National policies which affect military manpower are based upon the following state objectives, which coincide with the roles identified for Iraqi armed forces:

(1) defending the position of the military within the regime

(2) defending the regime against internal opposition, and

(3) defending the country against external threats.

The first and second objectives require significant levels of internal security forces, which compete with the regular military for qualified personnel. The task of defending the regime is given to the Baghdad garrison of specialized troops and the general reserve at Al-Tikrit. The primary criterion for assignment to these forces is membership in the extended family and loyalty to the regime (though this in no way guarantees survivability, as evidenced by the recent purge of Hussein's brother.) Similarly, those employed in the regular internal security forces are selected on the basis of regime loyalty. Their function is primarily to control the non-Sunni Arab communities, particularly the Kurds.

The third objective requires a strong military force: the external threats to the regime are numerous, including Israeli, Iranian, Syrian, and various Arabian threats, depending upon the issues involved. (For example, Iraq has a long standing border dispute with Kuwait.) This objective has created tension between Iraq and more conservative Arab governments, as well as other nationalist regimes, such as Syria, which views Iraq as a threat and a source of competition.

The militaristic nature of Baathism, along with high revenues from oil, have enabled the government to maintain tight internal control and to develop a military force which is superior to that of any other Arab state in the region. Fear of Iraq's military prowess, the current debacle with Iran notwithstanding, has helped in gaining economic payoffs and political support from neighboring Arab Gulf states.

2. The Population Base

The current population of the country is 14,509,000, which makes Iraq the fifth most populated country in the study. The average annual rate of growth since 1970 has been 3.4%, and it is not projected to increase beyond 3.5% through 2000. Based upon that growth rate, the total population should expand to 19 million by 1990 and 26 million by the year 2000. The life expectancy rate had improved to 57 by 1981. The crude birth rate remained constant since 1960, while the crude death rate had dropped from 20 per 1,000 in 1960 to 13 per 1,000 in 1979. The age distribution of the population is similar to all other Arab countries: 47% are below age 15; 51% are between ages 15-64; and 2.0% are over age 65.

The urban population has been important in the power structure of Iraq for some time as it has furnished the major strength of the Ba'ath Party. The current rate of urban population growth is 5.6%, and it is now 65.7% of the total population.

Of the 14.5 million in the population, there are approximately 3.3 million males between the ages of 15 and 49. Of those, 1.9 million are fit for service, and an additional 160,000 reach draft age (18) annually.

The death tolls in the campaign against Iran have been higher for Iran than Iraq, although the population base for Iran is more than 3 times that of

Iraq. Estimates of the death toll for Iraq range between 40,000 and 80,000. Iran also claims to have captured at least 50,000 Iraqi prisoners. Since the outbreak of the war, the standing army has been increased from 140,000 in 1978 to 252,000 in 1982. Casualties as high as 130,000 (and that may be conservative) have been a major setback to the supply of military personnel. All of these figures are highly speculative.

3. Civilian Human Capital Development Programs

Considering the condition of Iraq at the time of independence, it has made significant gains in the past four decades. One of the benefits of a strong central government with increased oil revenue has been control over improved educational and health services. However, in comparison to other countries in the region, Iraq remains behind in the level of development.

Health: The efforts of health care and nutrition have been less successful than those in education. The percentage of the GNP devoted to health expenditures declined from 1.2% in 1969 to 0.8% in 1975 (estimates beyond 1975 are not available). The government controls almost all medical facilities. The major problem is a critical shortage of trained personnel particularly in rural areas. Currently there are 2,530 people per physician and 3,010 per nurse. These estimates make Iraq eighth among the ten countries. There are 480 people per hospital bed which ranks Iraq seventh. The percentage of the daily caloric requirement is 101 -seventh in the study.

Education: In 1960 the adult literacy rate was 18%, in the middle range of the countries studied but low nevertheless. Recent estimates cite the current rate between 25 and 40%, which remains low in comparison to other countries in the region. The government has spread opportunities for basic education throughout the country, an effort confirmed by statistics. From 1960 to 1980, there was an increase in the number of students enrolled in primary and secondary schools, and in higher education as a percentage of the age group: 65% to 100%; 19% to 57%; and 2% to 9% respectively. Although a shortage of qualified teachers exists, there were 9.1 per 1,000 of the population in 1977, placing Iraq fourth among the countries studied. Similarly, according to the student teacher ratios, Iraq is in the upper half of 10 countries: 28 in primary and 27 in secondary schools.

In spite of oil revenues, the government has decreased the percentage of GNP devoted to education, declining from 5.7% in 1969 to 4.0% in 1978.

4. National Human Resources

The population base per se is sufficient to meet the needs of the country well into the future. Many analysts agree, though, that war's destruction has set Iraq's development efforts back at least 2 decades. Therefore, the ability of the country to enhance its national human resources and to equip a modern army are neglible. Industrial capability has been devastated, economic resources have been depleted, and skilled manpower has been sacrificed. The impact of the war has yet to be measured: obviously, the economic costs have

been severe. Estimates place the cost as high as one billion dollars per month, financed mostly by other Gulf countries. Moreover, significant industrial capacity has been destroyed.

As an OPEC member, Iraq had made impressive, economic gains since 1973. Oil revenues had grown to $9.8 billion by 1978. The GNP had grown to $31.3 billion in 1981 and the GNP per capita reached $2,300, although oil production has since been reduced. If the conflict escalates, oil production facilities could be destroyed. Other Gulf countries have given massive amounts of aid to support Iraq; some 25 billion dollars came from the Gulf Corporation Council as of March 1982. However, in light of the economic recession, that level of aid has been reduced.

5. Civilian Versus Military Opportunities

As in the case of Syria, Iraq's manpower base is sufficient to meet anticipated needs. However, the nature of the system, composed of a highly volatile and heterogeneous population, precludes its effective use. The primary criteria for manpower allocation is loyalty to the regime and membership in the Takriti group. Therefore, potentially qualified personnel are excluded from service. Given the setback in development efforts, critical shortages in skilled manpower will continue, thus preventing improvements in the level of expertise and efficiency in the Iraqi military.

All males between the ages of 18 and 40 must serve 2 years in the military and afterwards maintain reserve status for 18 years. The army's reserves are stated to number about 250,000 men, although they are not organized by unit, nor called up for training at regular intervals. Conscription policies, and the basic pool of manpower, have ensured a continual growth in the size of the army and in the respective character of the various ethnic groups. The government (the president) controls the allocation of manpower.

Since the war with Iran, Iraq has succeeded in attracting Egyptian manpower to serve in the Armed Forces. This transfer of manpower from Egypt to Iraq began with earlier Iraqi policies granting citizenship to Egyptian immigrants. Specific figures of Egyptian emigration to Iraq are not available. However, estimates of current Egyptian forces there number as high as 20,000.

All sectors of the country suffer from a shortage of skilled manpower, although the raw manpower base is sufficient. In keeping with the efforts toward industrialization, the percentage of labor involved in agriculture declined from 53% in 1960 to 43% in 1979, while the percentage in industry rose from 18% to 25%. The participation of women is beginning to improve. Their current share in the labor force is 4.2%. The opportunities and attitudes toward women working in Iraq are better than in most other Arab countries, particularly in professional jobs. Therefore, as the educational outlook improves, women are expected to increase their participation, easing the pressure on the civilian sector in favor of the military.

6. Military Training

Primarily, the Soviet Union has assumed the task of training. As of January 1978, there were 2,000 Soviet advisors in Iraq training army special forces and armored divisions; air force combat, bomber, transport, and helicopter squadrons; and navy submarine chaser and missile patrol boat crews. Czechoslovakia, East Germany, India, Pakistan, Egypt, France and Cuba have also maintained military missions in Iraq. The primary emphasis has been on creating armored, infantry, and specialized support units.

While Shiism is not monolithic, that does not have any bearing on the relationship between a Shia majority and a Sunni minority in a state controlled by the latter. Iraq has always had trouble with the Shia in Iraq - that is one reason the regime is so repressive.

Conscripts receive basic training followed by on-the-job training, regular personnel combat, technical and administrative schools. Army officers attend the Military College at Baghdad. Air force pilots are trained at the Air Force Flying College near Basra. Some go to special programs in Britain. The military also maintains a Reserve College, that provides training for professional specialists such as doctors and legal personnel as well as a staff college for specialized training for company-grade officers.

Until the war against Iran, the major thrust of Iraq's experience had been counterinsurgency operations. The only other recent experience of high intensity was when Iraq sent troops to support Syria in the Golan Heights (in 1973). The military has more counterinsurgency experience than any other Arab country: its main operation was against the Kurdish revolt from 1961-1975.

The present war with Iran, which has gone on for 3 years now, has given Iraqi soldiers more than sufficient opportunity to test their skills. They haven't proven very effective. Although they gained initial advantages and control of some Iranian territory, they have been repelled and have lost some of their own territory. Their casualties have also been very high. It seems doubtful that the experience of the war with Iran has improved Iraqi military capabilities.

Clearly, Iraq is dependent upon foreign sources for military hardware and training. Since the 1960s, the major supplier of arms has been the Soviet Union making the country the 3rd largest recipient of Soviet aid. In recent years, arms agreements have been secured with France, Britain, and Italy, which oil revenues and grants from Arab Gulf states made possible . Given Iraq's severe economic condition, Iraq will continue to depend upon foreign aid and oil exports. The decline in the world oil market affects both.

7. Military Manpower Resources

The continued war with Iran has greatly eroded the morale needed to support an effective military. First, a majority of the population is Shia Muslim, many of whom feel a greater attachment to Khomeini than to Hussein. This largely accounts for the repressive policies of the ruling Sunni regime.

Second, as the economic cost of the war increases, the ability of the government to pacify discontented sectors of the population with economic rewards declines. Third, the population is becoming increasingly unsupportive of a military campaign with high human costs, which seemingly has no chance of victory. For these reasons, Hussein has attempted to insulate the population from news of the war, but if the military does not regain its position, the support needed to maintain power may be eroded.

LIBYA

COUNTRY PROFILE

Libya occupies a vast territory of 1,760,000 square kilometers situated on the North African coast between Egypt and the Western States of Tunisia, Algeria and Morocco. The southern extremity stretches down into the Sahara, where it borders the Sudan, Chad and Niger.

Libya's population of three and one-half million is concentrated in three areas: Cyrenaica in the northeastern coastal and mountain area; Tripolitania along the northwestern coast and dominated by Tripoli, the largest city; and the Fezzan, a cluster of widely separated oases to the far south. Libya actually became a nation as a result of Italy's attempts to colonize it beginning in 1911. This colonizing effort placed Libya on the map, forced the Powers to decide its fate following the fall of Mussolini, and oriented the Libyans against "Western imperialism."

Against this background, two developments have shaped Libya as it is today. The first was the discovery and development of oil reserves of good quality on the European side of the Suez Canal, making what had been a very poor country extremely rich. The second was a revolutionary takeover in 1969 by a group of young army officers dedicated to Arab Nationalism as it had developed in Egypt under Nasser. Compared to the aging and recently defeated Nasser, these were fanatic and aggressive idealists determined to achieve the most exaggerated goals of Arab Nationalism and impatient with the cautious advice of more pragmatic, and experienced Arab leaders.

The revolutionary regime, which continues to be controlled by Colonel Muammer Qaddafi who led the coup that overthrew the Monarchy, has made a sustained effort to change what was an unintegrated and undeveloped country into a socialist Islamic state with a major role in African, Arab and Third World affairs generally. Libya's substantial revenues from oil have been used to develop Libya as a nation and to give it the capability to play the world role its leader envisions.

Despite all the money spent and the outpourings of revolutionary doctrine, Libya remains a country with a relatively small and unskilled population. What it has is money and single-minded leadership.

MANPOWER DETERMINANTS

1. Government Policies

Since its inception, the Libyan Revolution has been dominated by Colonel Qaddafi. Under Qaddafi, Libyan national security policy is an integral part

of national policy. The primary purpose is to achieve the destruction of Israel and the forces that support it, to bring about the unification of the Arab World, and to aid "anti-imperialist" forces in Africa and worldwide.

The Libyan leadership has developed the armed forces as one of several integrated instruments used to pursue Libya's goals; conventional defense is only a minor part of Qaddafi's larger purpose. He has used Libyan wealth to purchase and store quantities of sophisticated arms far beyond Libya's capacity to absorb or maintain weapons of such quantity or sophistication. He has supported and financed clandestine and subversive endeavors against his enemies giving money, arms, and other assistance to elements as diverse as the Irish Republican Army, The Japanese Red Army, and anti-government forces in Morocco, the Sudan, Niger, and Chad. He has trained terrorist cadres or "freedom fighters" from all over the world.

Qaddafi has been building up his armed forces, providing them with the best training and equipment that money can buy. He has, however, been cautious about injecting these troops in situations that might exceed their capabilities. He sent a token force to Syria in 1973 and a force to Uganda to help Idi Amin. Libyan forces engaged the Egyptians on their border in 1977 and Qaddafi was quick to end the fighting when it proved unsuccessful. In Chad the Libyan leader has made a series of probes, sometimes engaging a sizeable ground force; but he has shown the capacity to draw back when the risk became unacceptable, when he has misjudged his opposition, or when he was making more enemies than the venture warranted. But he has always returned to introduce troops across the frontier.

Any evaluation of Libya's military manpower must take into account the apparent fact that the Libyan armed forces were not created to perform a conventional mission. Qaddafi appears to be aware that for some time Libyan forces will be unlikely, even with their enormous arsenal, to muster the technical and organizational skills necessary to engage any modern force in combat, such as the Egyptian army. It also seems likely that Qaddafi will continue to use a full range of tactics to achieve his goals. His supply of money is likely to hold out and he seems to have the acquiescence of the majority of the Libyan people. A key question is whether or not he has the solid support of the Army: there have been several attempts against him, and there are a number of army officers in detention.

2. The Population Base

Libya's population of three and a half million is one of the most homogeneous anywhere in the Middle East. Ninety-seven percent are Sunni Muslims of mixed Berber and Arab stock.

The Sunni Muslim majority favors the regime's strict adherence to Islam and its support of Arab Nationalism. Despite the enormous expenditures on arms and other costs of the state's foreign and military policies, oil income is sufficient to provide very well for the average man. The 3 percent of the population of other-than-Libyan origin is too small and too intimidated to generate trouble.

The approximately one-half-million foreign workers, 400,000 of whom are Egyptian, are anxious to keep earning money at a rate far higher than they could at home, and are aware of the government's will and ability to take them into custody or deport them with the slightest provocation.

About 850,000 of the Libyan population is male between 15 and 49. Of these, 500,000 are said to be fit for service. Annually, 36,000 males reach the age of 17. Conscription has recently been instituted, requiring five years services from fit males and unmarried females. Little progress has been made in implementing the requirement for conscription of females.

3. Civilian Human Capital Development Programs

Libya is making liberal provisions for human capital programs in all fields. The major problem is that the country has had to start from a very low base.

Health: Life expectancy in Libya is at present average for the area but in view of the amount of money being spent on health services that figure should change.

In 1980, Libya had the highest ratio of physicians, nurses, and hospital beds per unit of population in the area except for Israel. Caloric supply per capita was the highest in the area.

Education: Libya has a very high percentage of the relevant age group enrolled in primary school, and a somewhat higher percentage than average for the area in secondary school. There are fewer students in higher education than most area states, but until recently this has been a function of the low overall levels of school enrollment. Pupil-teacher ratio in primary and secondary schools is better than average.

The government has established an extensive program in technical education, but has found it difficult to persuade young people with the proper qualifications to train to become technicians, a status considered lacking in prestige or satisfactory reward.

Despite the low overall numbers of Libyan students in institutions of higher education, Libya had 296 students enrolled in American universities and technical schools in 1976-77. (Considering its population size, this compares favorably with Egypt which had 178, Iraq with 400, Jordan with 177, Syria with 59 and Saudi Arabia with 661.) A high proportion of these students were enrolled in courses in science, engineering and related disciplines.

4. National Human Resources

Libya is as rich in material wealth, as it is poor in human resources. Not only is Libya's population small, but also there is a dearth of people with education, training, or experience in basic language and mathematical skills, in management of modern business or industry, in science or technology, or indeed in the skilled crafts.

Libya is currently addressing this problem by purchasing foreign talent. The outlook is that, despite intensive programs to develop the native labor pool, there will be a lag for some years before these programs bear fruit.

5. Civilian Versus Military Opportunities

The Libyan regime provides many inducements for young men to enter the military: good pay and conditions, and high prospects for training and prestige.

That members of the ruling Revolution Command Council and their trusted friends monopolized the top ranks since the revolution may have somewhat diminished the attractiveness of the officer corps. Rumors of discontent within the officer corps and of coup plotting may also affect recruiting.

The biggest problem for the Libyan Army and other services is recruitment of personnel suitable for the NCO and specialist ranks. This is, of course, the same problem that prevails in the civilian sector.

The rank and file consists of conscripts and some remnants of the Libyan Arab Force assembled in Egypt during World War II. Some recruits still come from nomadic and oasis peoples and make good soldiers, although they have no technical or mechanical skills.

With a great many Libyans disdaining any kind of menial work and a scarcity of trained and skilled people, the most appealing job opportunities for Libyans are in the government where a great many sinecures require neither diligence nor skill.

Several years ago there was concern that the armed services were taking too many skilled people away from the civilian economy, but this problem has been circumvented by importing increasing numbers of foreign workers.

6. Military Training

With 2,000 tanks, 400 combat aircraft, and 30 combat ships, the Libyan armed forces need substantial numbers of men with technical and mechanical skills. Basic training is furnished conscripts in the Libyan services and is later supplemented with unit training programs.

Each service maintains an academy for the training of officers. The Air Force operates a secondary college and sponsors a number of aeronautical organizations provided with government aircraft to foster the development of interests and skills useful to the Air Force. A substantial portion of training at all levels in the Libyan armed forces occurs in military schools abroad, mostly in the Soviet Union, and by foreign training missions stationed in Libya.

Most on-the-job training is furnished under the supervision of foreign advisers and instructors.

Resident foreign military missions from a variety of countries heavily support the Libyan armed forces. These include the Soviet Union and other Warsaw Pact countries, Cuba, Yugoslavia, France, Nationalist China and Pakistan. Most of these missions perform a combination of maintenance training, instruction in weapons use and military operations, and participation in operations and exercises.

By far, the largest advisory group in Libya is the Soviet contingent, with 1,000 to 2,000 personnel (military and civilian). It mans radar installations and missile sites, and trains tank crews and combat pilots. The French have been maintaining the Libyan Air Force's Mirages. The Yugoslavs staff the Air Force academy.

It is highly questionable that the Libyan armed forces could function without their foreign advisers, or that dependency is likely to diminish in the near term.

7. Military Manpower Resources

Starting almost from scratch, the Libyans have spent more than a billion dollars a year for the past several years to build up a military establishment with the mission of fostering Arab nationalist and worldwide revolt against the Western "imperialists."

Their manpower resources are inadequate for the job and incapable of using the accumulated weaponry . Libyan manpower is also inadequate to support the economic development planned for the country. With the substantial expenditure of resources on civilian capital development, some progress will certainly be made. However, there is every indication that it will be some time to come before Libya can meet its own demand for skilled technical and managerial personnel: presumably, sympathetic governments will continue to fill Libya's manpower gap with foreign workers and military advisers. Lastly, it is difficult to assess the long-range personnel requirements of a country pursuing such quixotic military policies.

ALGERIA

COUNTRY PROFILE

Algeria has been the creation of the Army since the end of the war of independence from France in 1962. The Algerian Armee de Liberation Nationale (ALN) fought against French forces that numbered as many as half a million at times. The roughly 50,000 mostly Berber guerilla fighters of the "internal" arm of the ALN paid a terrible price--many lives--for this victory. After the peace, the "external" force that had spent the war in Egypt, Tunisia and Morocco seized control, purged the Army and dismissed most of the members of the "internal" force.

Throughout the war of independence, the revolutionary movement, referred to as the Front de Liberation Nationale (FLN), had a political wing under Ben Bella and a military wing under Colonel Boumedienne. In 1965, Boumedienne took over control and put Ben Bella under arrest. He ruled Algeria until his death in 1980, making the Army the dominant force in the country with a mission that combined political as well as military objectives.

Internally, Algeria has espoused a socialist policy modified by an economic pragmatism with capitalist characteristics. Faced with limited agricultural land and a rapidly growing population, the regime has concentrated on developing an industrial capability. Since this must depend on the development and sale of the country's immense natural gas reserves requiring large foreign loans and access to the American market, the government has cooled its radical rhetoric. Evidence of this is the government's recently implemented program to couple industrial development with incentives for small-scale free enterprise and better management of agricultural resources.

Algeria has been deeply involved in the support of the Polisario rebels in the former Western Sahara territory now divided between Morocco and Mauritania. Algeria has harbored a substantial part of the former inhabitants of the territory in camps within Algeria and with Libyan and Soviet support, has provided arms and other assistance to Polisario. After being bested by Moroccan forces in a brief clash in 1963, Algeria has avoided involving its own troops in the territory claimed by Morocco.

Algeria's quarrel with Morocco is partly a manifestation of its dislike of the Moroccan monarchy, partly ideological, and in part an assertion of its claims as a Saharan power seeking regional preeminence. Collaboration with Libya is probably increasingly unpalatable as Colonel Qaddafi's ambitions in Chad and the rest of the Saharan region unfold.

MANPOWER DETERMINANTS

1. Government Policies

Under Boumedienne, Algeria rigorously adhered to a radical socialist policy internationally. It played a leading role in the Arab League, in the Organization of African Unity, and in Third World affairs, generally taking a radical position on Arab Nationalist and Anti-Imperialist issues.

Domestically, however, Algeria has steadily become more pragmatic. This trend has been more marked since Boumedienne's death.

The central role of the military in Algeria's government has affected its mission, focusing its resources more on internal development than on foreign initiatives. Algeria's interest in the Saharan region and in pursuing its rivalry with Morocco have dictated its role in support of Polisario, but its leaders seem to be pragmatists on this matter, as on others.

2. The Population Base

Algeria has a population of 20 million, increasing at a rate which will bring it to 35 million by the year 2,000. With 2,713,000 males fit for service and 225,000 reaching the age of 19 annually, Algeria has enough manpower to meet the needs of its 100,000 man armed forces.

Algeria's manpower base is not weakened by ethnic or religious strains. 99% of the population is of Arab-Berber extraction and is Sunni Muslim. The Berber population is separated into three groups, geographically and culturally, and is rapidly merging into the Arab population. It is generally agreed that distinctions between Berber and Arab are disappearing.

3. Civilian Human Capital Development Programs

The Algerian government is spending a substantial part of its income on human capital development with the object of creating an industrial base capable of supporting the population. Per capita income in 1981 was $2,382, second only to that in Saudi Arabia.

Health: There are 2,650 persons per physician which is considerably better than Morocco, about the same as Iran and Syria, but worse than the remainder of the ten states being studied. There is, however, one nurse for every 740 persons (1980). Only Libya and Israel do better. There is one hospital bed for every 370 persons, worse than in Israel or Saudi Arabia, but better than in the other states. Life expectancy is average.

Education: Algeria has been spending 30 percent of its budget on education. 95% of children of the appropriate age are in primary school, 33% in secondary school, and 5% in institutions of higher education. Pupil-teacher ratios are average. Literacy, which was very low--probably no more than 10% at the time of independence--is up to 35% and rising.

As the Algerian armed forces are largely made up of professionals, most of those required to give six months of service during their nineteenth year are put to work on civic action projects. The program is intended to serve to indoctrinate the youth in the ideals and goals of the nation. There is, however, a large portion of the population which is not benefitting from the experience of employment or military service.

4. National Human Resources

Algeria's people are relatively untrained and unskilled. Their future depends on the success of the government's ambitious program to spend a substantial part of its revenues from oil and gas on upgrading its manpower. Algeria is in a race against time as the population grows and the peasants flee the land for the cities.

5. Civilian Versus Military Opportunities

Algeria's high unemployment and favorable attitudes toward military life have meant that there have consistently been more people trying to join the armed forces than are needed. The upper levels of the military are still controlled by the alumni of the "external" arm of the ALN, and the Army is still the best way to important and remunerative jobs in government and in nationalized industry.

Opportunities in the civilian sector are limited but can be expected to increase with the rising export of natural gas and execution of the government's program of industrialization. It seems unlikely, however, that the appeal of the civilian sector will adversely affect the availability of manpower for the military.

6. Military Training

The ALN had very few training institutions after independence and sent most of its officers abroad for training. Most went to the Soviet Union, some to Egypt in Nasser's time, and some to France. There is now a military college at Blida for the Army, an Air Force academy at Tafraouine near Oran, and a flight school near Mers el Kebir. Technical training for NCO's is furnished at Blida. Regular unit training and operational exercises are carried out with Soviet participation.

The bulk (90%) of Algerian weapons are Soviet made. Soviet advisers have played a large role in the training and development of the Algerian forces though numbers of Soviet advisers in Algeria have decreased to 1,000 or less.

7. Military Manpower Resources

The quality of the Algerian military establishment is limited by economic constraints, though pressures exist for its expansion: the prospect of a larger conflict with Morocco (tempered somewhat by the change in government), the preoccupation of the Army with political and social affairs, and by the limited capabilities of manpower in technological fields. Indeed, there has been some recent increase in military expenditures.

In time, the first and third of these factors should decrease in importance. The second--the involvement of the Army in politics and economic and social management--may not change as fast, but there has been movement away from Boumedienne's military dictated absolutism since his death.

Like the Moroccans, the Algerians fought with French forces in both World Wars and proved to be good soldiers. The "internal" arm of the ALN fought a heroic and determined guerilla campaign that eventually broke the French will to continue. That experience is not, however, transferable to regular military operations. In 1963 Algerian forces did badly--the only combat experience that the ALN has had against regular formations.

MOROCCO

COUNTRY PROFILE

Morocco has been a nation for centuries. After the conversion of the native Berber tribesmen to Islam and the blending of that stock with several waves of Arab migrants from the Arabian Peninsula and elsewhere to the East, Morocco became the main center of power in northwest Africa. Its soldiery ranged from Spain to the southern fringes of the Sahara. Morocco's character as a state is still powerfully influenced by its geographical position as the westernmost Muslim state, by its ancient Monarchy, and by the fighting abilities of its military.

Morocco has also been powerfully influenced by its experience as a French colony. It won independence from France in 1956--before the other parts of the French African empire--because of its relative national maturity and its Monarchy. The Army was shaped by the officers and men who fought with the French in World Wars I and II and other French wars, including Vietnam.

The experience of nationhood after independence has been a stormy one fraught with ongoing conflict between the monarchy, which exercised proprietary control over the Army, and the nationalist political parties, of which the Istiqlal was the most important.

Conflict between the monarchy and the nationalist parties became more and more intense until two serious efforts to unseat King Hassan took place in 1971 and 1972. Both were nearly successful and both were led by senior military officers. It appeared that the Monarchy was very close to the end of its tether.

Two developments averted this outcome. First, the King began to take a somewhat more conciliatory line toward the nationalist parties. Secondly, and probably more important, Morocco sent a military force to join a United Nations unit in the Congo which performed its mission with honor. Another Moroccan force was sent to fight beside the Syrians on the Golan Heights in 1973 and again did well; and a 1963 contest with Algeria resulted in initial success against Algerian troops and involvement in a contest with the Algerian-backed Polisario over Morocco's claim to the northern part of former Spanish Sahara. All of these develop- ments appealed to nationalist sentiment in Morocco, as did King Hassan's activity in Arab League affairs, including his acting as host to major Arab summit meetings.

The threat of a military takeover seems to have been very much reduced. The long, drawn-out contest with the Polisario still unites the nation. Should the contest lead to direct conflict with Algeria, the effect within Morocco would be to evoke nationalist sentiment and support for the King, for

a time at least. It seems unlikely though that either the Moroccan or Algerian authorities see any advantage in an all out war between the two countries.

MANPOWER DETERMINANTS

1. Government Policies

King Hassan still plays the predominant role in the determination of Government policy, although challenges to the Monarchy have forced him to be more responsive to political forces within the country and to popular sentiment.

The King needs the support of the military to stay in power. He is also aware that the military has to be involved in any effective move to unseat him. He has used the military to shore up nationalist sentiment and is aware that the role of the military in fighting the Polisario and confronting Algeria is currently contributing to the security of his position.

Hassan must be aware that there is a limit to the political advantage to be gained from Morocco's embroilment in the Western Sahara. Morocco's territorial claims there are important largely as a matter of prestige and national pride. The same is true with Morocco's confrontation with Algeria. In other words, Morocco's military purposes are more psychological and political than territorial.

2. The Population Base

Morocco's population of 23 to 25 million is almost entirely an Arab-Berber mixture. Differences between Arabs and Berbers are fading rapidly and although some thirty percent of the population speaks a Berber dialect, most Berber males and most young people also speak Arabic. There is little prospect of political strains developing along Arab-Berber lines, or of conflict emerging between the two groups in the armed forces.

There are roughly 5 million males between the ages of 15 and 49, of which 4 million are considered fit for service. 255,000 reach the age of 18 annually, and the armed forces are 116,500 strong. A military service law was enacted recently, but the armed services have no difficulty in meeting their manpower needs with volunteers. Unemployment is high in Morocco, military pay is as good or better than pay in the civilian sector and many Moroccans have a tradition of and a liking for the military life.

3. Civilian Human Capital Development Programs

Health: Life expectancy in Morocco is about average for the area. In 1980, the country had the lowest physician to population ratio (four times worse than any other nation in the study), an average nurse to population ratio and about an average number of hospital beds per unit of population. There is a family planning program with 5% of married women said to be users.

Education: 76% of Moroccans of the appropriate age are enrolled in primary school, 95% of the males and 58% of the females. 24% of the appropriate age group are in secondary school and 4% in higher education. This percentage is the lowest for any of the ten nations being studied. Adult literacy was rated at 28% in 1980--higher only than Saudi Arabia--but this figure is increasing much more rapidly in Saudi Arabia than in Morocco. In recent years, Morocco has had fewer teachers per thousand population than any of the other ten countries being studied.

4. National Human Resources

Morocco is a poor country. Income per capita is lower than any of the other countries being studied except for Egypt with human capital development programs poorly funded. There is a very small pool of trained manpower, particularly in areas where technology is important. The Moroccans are, however, a sturdy and hard-working people who make good soldiers.

5. Civilian Versus Military Opportunities

Service in the military is very attractive to Moroccans, particularly to the people from rural areas. Officers' pay is at the same level as civil servants in comparable jobs. NCO's and the rank and file generally fare better in the military than they would in civilian life. There is, therefore, no problem in meeting the manpower needs of the armed services.

For persons with special skills in business, management, professional and technical areas, there are opportunities for Moroccans in the civilian sector of the economy. For those who meet the qualifications of the officer corps, however, these opportunities are not significantly more appealing than those in the military. Persons without skills face an economy in which there is high unemployment, and for them the military is often more appealing. Morocco sends substantial numbers of laborers to the Gulf states but very few technicians or professionals.

6. Military Training

With only 260 tanks, 75 combat aircraft, and 22 combat ships, the Moroccan armed forces do not have a requirement for many technicians. There are ample supplies of fit and willing men suitable to man the armed forces at established levels: the country's resources and national security goals.

Moroccan officers are generally of urban origin and the rank and file, including NCO's, are largely from rural areas.

The Royal Military Academy at Dar el Bayda offers a course of instruction based on that at St. Cyr. Most officers have graduated from this course, and some have attended foreign military schools, particularly in France. Holders of university degrees in subjects of interest and value to the military (engineering, medicine, etc.) can receive direct commissions after a six months' course at Dar el Bayda.

Ranks below the officer corps are largely filled with professionals who receive their training on the job and in their units.

The Moroccan armed forces provide a regular schedule of training exercises.

Morocco has received a relatively small amount of foreign assistance compared with other area states. Most has come in the form of training from the French and Americans on French and American-supplied weaponry.

7. Military Manpower Resources

Morocco has the manpower resources to meet its national security requirements as now defined and to operate the weaponry it can afford or is likely to procure.

The Moroccan Army has been fighting the Polisario rebels since 1975 in the Western Sahara. Polisario has been well supplied with weapons, often fights in sizeable units, and clearly has the benefit of experienced advisors. Thus, a substantial part of the Moroccan Army has had useful combat experience. There are now believed to be as many as 30,000 Moroccan soldiers in the combat zone.

CHAPTER IV

PROJECTED OUTLOOK FOR

MILITARY MANPOWER LEVELS

IV. PROJECTED OUTLOOK FOR MILITARY MANPOWER LEVELS

The previous chapters discuss the manpower process and the interrelationships among and between the key determinants of military manpower. The model simulates the interaction of these dynamics and serves as an outline for the collection and synthesis of manpower-related data. The narrative country studies in turn furnish values for these major sectors of the model, and address non-quantifiable and policy considerations less easily represented in the execution of the mathematical model.

Both of these analytic approaches provide the basis for the presentation here of numerical labor pool projections and scenario-like, country-specific circumstances under which military manpower levels and requirements might be expected to rise and fall. The table of projected working age, military-eligible labor pool figures simulates the partial execution of the manpower model discussed in Chapter II through the stage of identifying human capital resources. These examples have been selected on the basis of their likelihood and utility in illustrating each country's likely response to changed manpower requirements. While the earlier sections of the report have focused on the present manpower picture and the processes determining current labor pool levels, this chapter addresses the outlook for manpower availability in each of the ten countries through the year 2003.

EXHIBIT IV-A

PROJECTED AVAILABLE MANPOWER

Country		Value (millions) 1983	2003
ALGERIA	Military age population (males)	4.39	8.9
	Reach military age annually	.22	.45
EGYPT	Military age population (males)	11.38	16.47
	Reach military age annually	.47	.71
IRAN	Military age population (males)	9.78	18.36
	Reach military age annually	.42	.79
IRAQ	Military age population (males)	3.31	6.59
	Reach military age annually	.16	.32
ISRAEL	Military age population (males & females)	1.87	2.52
	Reach military age annually	.07	.09
JORDAN	Military age population (males)	.77	1.59
	Reach military age annually	.04	.08
LIBYA	Military age population (males)	.85	1.76
	Reach military age annually	.04	.08
MOROCCO	Military age population (males)	5.01	9.97
	Reach military age annually	.26	.52
SAUDI ARABIA	Military age population (males)	2.78	5.42
	Reach military age annually	.10	.20
SYRIA	Military age population (males)	2.14	4.69
	Reach military age annually	.10	.22

MANPOWER OUTLOOK

EGYPT

A. Circumstances in which military manpower levels might be reduced:

1. Substantial reduction of the military threat for Egypt, accompanied by relative peace and stability in the area.

Comment: In these highly unlikely circumstances, Egypt would probably reduce military expenditures. Economic stringencies, likely to persist for many years, would also influence such a course. Savings would, however, more likely be made in sophisticated equipment rather than in manpower as Egyptian leaders are likely to be concerned about instability along their African borders, the potential threat from Libya while Qaddafi remains in power, and the danger of subversive actions by Iranian-supported Islamic fundamentalists, or by Syrian and communist-supported radicals.

2. Additional low manpower level factors:

- continued peace with Israel;
- peace with Libya; softening of Qaddafi's policies;
- strong relations with U.S. and viable defense guarantees;
- growth of competing opportunities in private sector;
- continued diversion of funds out of defense;
- deterioration in morale and support for military and government policies; and
- unrest within military.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. A major conflict between Israel and other Arab states including Syria.

Comment: As in past wars, time factors would probably prevent expansion of forces. Egypt would have to fight with the forces it had, even without an army or air force nearly equivalent to Israel's.

2. Direct confrontation with Libya.

Comment: In this case, time might allow Egypt to build up its forces' overall manpower but not its weapons inventory, unless Egypt were to receive outside support.

3. Additional high manpower level factors:

- deterioration of relations with Israel, i.e., prospect of war;
- implementation of fundamentalist or military regime;
- military build-up in response to threats from:
  - fundamentalist regimes
  - Arab hard-line states
  - Libya
  - Israel;
- takeover by anti-Egyptian regime in:
  - Sudan
  - Jordan.

ISRAEL

A. Circumstances in which military manpower levels might be reduced:

1. Resolution of conflict in Lebanon.

2. Change in government and policy in Syria.

3. Decline of effectiveness of Palistinian irridentist movement.

Comment: Israel's military organization is already keyed to respond rapidly to both reduction and intensification of threats to its security. The size of Israel's regular forces might be reduced somewhat if circumstances cited above prevailed, but it is difficult to envisage a situation in which Israel would not find it necessary to maintain the capability to mobilize all available manpower on short notice.

4. Additional low manpower level factors:

- withdrawal from Lebanon;
- retreat from occupied territories;
- improved economy: more attractive civilian sector opportunities;
- no change likely in universal obligation to serve in military;
- decline in immigrant population; and
- emigration of manpower.

B. Circumstances calling for full mobilization and expansion of military manpower:

Comment: Economically, Israel cannot maintain full mobilization for more than a few weeks: the economy would come to a halt. Israel's available manpower is already trained and ready in both the regular and reserve forces. Little additional manpower would be called up.

1. Additional high manpower level factors:

- continued occupation in Southern Lebanon;
- war with Syria:
  - pre-emptive or retaliatory strikes
  - engagement in Lebanon
  - total war
  - occupation of territory;
- rising immigrant population assimilated into military;

- build-up in response to threats from:
  - Syria
  - PLO, fundamentalist guerillas
  - Jordan
  - Egypt;
- capacity to sustain:
  - division of manpower into military
  - high level of defense spending
  - continued high level of foreign military and economic aid;
- war in the Gulf:
  - collapse of Iraqi regime and Iranian invasion
  - collapse of monarchy in Kuwait, Saudi Arabia.

SYRIA

A. Circumstances in which military manpower levels might be reduced:

1. Change in the regime, providing the successor is: (a) more representative of the Sunni majority (allowing a decrease in internal security force levels), and (b) more moderate toward Israel and conservative/moderate Arab states.

   Comment: A change in government is unlikely without direct intervention of another state (unlikely) or unless outside support for domestic groups trying to overthrow the regime is provided: the success of such an operation is doubtful. Even given the reported ill health of Hafiz Asad, his brother Rifat is in firm control of internal security and is unlikely to be removed from power without a struggle.

2. Agreement to withdraw from Lebanon and to negotiate a peace settlement with Israel.

   Comment: Syria will not withdraw from Lebanon without Israeli withdrawal, and will not agree to peace negotiations until Israel agrees to turn over the West Bank to full Palestinian control and return the Golan Heights to Syria.

   Additional low manpower level factors:

   - resolution of or amelioration of Lebanese situation;
   - improvement in relations with U.S. and Israel.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. Increased fighting in Lebanon and/or all-out war with Israel.

   Comment: Although Syria could increase its presence in Lebanon, it could not sustain a war with Israel, particularly without support from Egypt and in light of present U.S. involvement.

2. Confrontation with Iraq-unlikely given Iraq's present engagement with Iran.

   Comment: Although Syria is supporting Iran in the war with Iraq, Asad is not likely to become directly involved because of current commitments in Lebanon, and pressure from Arab Gulf states from which Syria receives aid.

3. Additional high manpower level factors:

   - increased tension and conflict in Lebanon;

- israeli military involvement in actions against Syrian forces in Lebanon;
- Further U.S. military involvement in actions against Syrian forces in Lebanon;
- collapse of Iraqi regime;
- partition of Lebanon.

JORDAN

A. Circumstances in which military manpower levels might be reduced:

1. Peace with Israel likely (only) in the framework of a region-wide settlement.

2. Decline in levels of economic and military aid from U.S. and Arab Gulf states.

Comment: Such a decline is unlikely as both the U.S. and moderate/conservative Gulf states depend on Jordanian support.

B. Circumstances allowing calling for full mobilization and expansion of military manpower:

1. Significant increase of economic and military aid from either the U.S. or the Arab Gulf states.

Comment: Even were Gulf states to agree to increased economic aid, the United States would have to be willing to increase sales of arms and equipment or Jordan would have to find other sources for purchase of military equipment.

SAUDI ARABIA

A. Circumstances in which manpower levels might be reduced.

1. Overall reduction of tensions in area.

Comment: This situation could come about only were basic changes to take place in the relations between Israel and Syria, between Iraq and Iran, and were the threat of subversion by elements of the Islamic fundamentalist movement greatly reduced. None of these possibilities appears likely. That all three might come about simultaneously is very remote. Even were these changes to come about, there probably would not be a significant reduction in either branch--regu- lar Army or National Guard--of the armed forces. The former are in the training and development stage and are regarded as a symbol of national purpose. The latter are required for internal security.

2. Additional low manpower level factors:

- continued peaceful relations with neighboring states;
- security of defense relationship with U.S.;
- limited absorption capacity;
- disintegration of tribal base for national guard;
- continued keen competition with private sector for skilled labor.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. Conflict between Israel and Syria supported by other Arab states.

Comment: This kind of development is likely to be over before Saudi Arabia could increase manpower levels in its regular armed forces.

2. Repeated attempts at destabilizing the Saudi regime by Islamic fundamentalist forces.

Comment: Saudi Arabia would use both regular and National Guard forces and would probably build up manpower in both. Present force levels, however, are probably adequate in size. Capability is the problem. Therefore, it seems unlikely that a need for greatly increased manpower would be perceived. The regime would probably concentrate on internal security measures such as tighter control of Syrian forces in the country and of foreign workers.

3. Additional high manpower level factors:

- change in regime:
  - shift from defense priorities
  - purge of military's ranks
  - stimulus for emigration of manpower;
- military build-up in response to threats from:
  - Iran
  - PDR Yemen
  - Israel
  - fundamentalist terrorists
  - armed internal rival factions;
- increased internal police role
  - oil revenues
  - foreign hardware, training, technology
  - internal order;
- mobilization, build-up to support war with Iran;
- military takeover.

IRAN

A. Circumstances in which military manpower levels might be reduced:

1. Resolution of conflict with Iraq.

Comment: Even were the current war of attrition to continue, the level of Iranian volunteers is decreasing and the number of desertions is increasing. The unwillingness of the population to continue supporting the war effort could pressure the government into a more flexible negotiating stance.

2. Change in the regime.

Comment: The current situation in Iran is so fluid that there are several alternatives for a change in the current regime. Estimates for the condition of a regime change, therefore, would have to take into account the nature of the new regime.

Note: Although there has been and continues to be a flight of skilled manpower from Iran, the manpower pool is large enough to provide an adequate base through conscription.

3. Additional low manpower level factors:

- heavy losses incurred in war with Iraq;
- reduction in forces following resolution of Iraqi conflict;
- change in regime;
- diversion of skilled labor resources to other areas of economy;
- dissatisfaction with regime, declining support for military institutions;
- emigration of skilled manpower;
- defense drain in civilian economy;
- decline in number of volunteers due to high mortality in Iraq war.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. Expanded conflict with Iraq in which Iran attempted to occupy the country.

2. Expansion of Iraqi war to other Arab Gulf states.

   Comment: Both possibilities are highly unlikely given that Iran's military and economic resources have been depleted during the past three years. Iran can be expected to support subversive activities in surrounding Arab states (Saudi Arabia, Kuwait, UAE), but is unlikely to make a commitment of troops.

3. Invasion by the Soviet Union.

4. Increase of separatist movements among Kurds or Baluchis.

   Comment: Unless the conflict with Iraq had been resolved, the government would have a difficult time responding to organized armed resistance movements.

5. Additional high manpower level factors:

   - maintenance of fundamentalist regime and policy of export of revolution;
   - new military campaigns against:
     - Saudi Arabia
     - Israel
     - small Gulf states
     - Soviets in Afghanistan;
   - use of military to suppress separatist movements among Kurds, Baluchis, Azerbaijanis;
   - declining opportunities in private economy;
   - heightened involvement in Lebanon;
   - expansion of Navy and Air Force;
     - oil revenues,
     - economic reconstruction,
     - resolution of factional and ethnic strife,
     - access to hardware, training, and
     - rebuilding of officer corps.

IRAQ

A. Circumstances in which military manpower levels might be reduced:

1. Resolution of the war with Iran.

Comment: Iraq is less capable of sustaining a war of attrition against Iran than visa versa, particularly since the decline in the world market for oil has forced a reduction in financial aid from Arab Gulf states. However, all efforts to mediate the conflict have failed. Resolution to the conflict will depend upon (1) Iran changing its demands for settlement, or (2) Iraqi surrender. Neither are likely.

2. Additional low manpower level factors:

- decline of level of fighting in Iran

B. Circumstances calling for full mobilization and expansion of military manpower:

Comment: Iraq is over-extended now, in terms of manpower, arms, and financial resources; not only has its capacity been reached, but the population is also becoming less willing to support a continuation of the war effort.

1. Additional high manpower level factors:

- Iraq is strained to limit now.

LIBYA

A. Circumstances in which military manpower levels might be reduced:

1. Change of regimes and abandonment of aggressive and revolutionary external policies.

Comment: In this eventuality, Libya could greatly reduce manpower levels in its armed forces.

A new and less aggressive regime would probably reduce expenditures on armaments but might not reduce manpower levels for two reasons: first, that a modernized standing Army, Air Force and Navy symbols of national self-esteem and will, and second, were it to assume that the armed forces serve to train and develop a large number of the nation's youth, integrating the country.

2. Additional low manpower level factors:

- change of regime
  - conservative civilian
  - less aggressive military.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. War with Egypt.

Comment: It seems unlikely that Libya would (a) initiate a war with Egypt (because of the likelihood of a humiliating defeat) and (b) persevere if it did. In any event, Libya would probably see no advantage in increasing manpower levels.

2. Intervention by Libya with conventional military forces in other African countries: Chad, Morocco, Sudan, Nigeria, or others.

Comment: Qaddafi has in the past shown great caution, not over-committing his forces, and it seems likely that he will continue to do so. It seems unlikely he would build up his forces, now so far from mastering the weapons they have, in the belief he could maintain a prolonged and extensive campaign in Africa avoiding a confrontation with forces--Egyptian, Moroccan, Nigerian (with foreign support)--which he could not handle.

Over time, (ten years), he might have more confidence in his forces.

3. Additional high manpower level factors:

- greater involvement in Saharan states.

ALGERIA

A. Circumstances in which military manpower levels might be reduced:

1. Improvement of relations with Morocco, an eventuality which would probably accompany the end of the Polisario rebellion.

Comment: From a military perspective, it would be reasonable for Algeria to reduce its force levels. Other considerations would probably prevail. First would be the central role of the Army in government and in development efforts. Second would be the Army's role as a force for national unification and as a source of employment and training for an underemployed population.

2. Additional low manpower level factors:

- modification of Libyan policies;
- end of Morocco - Polisario struggle.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. War with Morocco.

Comment: Algeria has a manpower base sufficient to support a considerable enlargement of its armed forces, probably up to double its present size. It also has the financial means to support such an expansion and a considerable stock of weaponry and likely access to more from the Soviet Union. This possibility, however, would necessitate a reversal of its endeavor to develop an industrial base considered essential to long-term national survival.

2. Adoption of a policy aimed at establishing an active Algerian military and political role throughout North Africa and the Saharan region.

Comment: Algeria is likely to try to maintain its claim to be a leader of Third World politics and maintain its rivalry with Morocco. The country is also likely to give highest priority to national development. The circumstance most likely to change this strategy would be a greatly stepped-up Libyan effort to establish itself in other Saharan countries. In this case, Algeria might change its priorities and build up its armed forces which it could do if it cut back on domestic development programs.

3. Additional high manpower level factors:

- war with Morrocco;
- higher commitment to Polisario.

MOROCCO

A. Circumstances in which military manpower levels might be reduced:

1. End of Polisario rebellion.

Comment: This eventuality would probably bring some reduction in Moroccan military manpower. Were tensions with Algeria to continue, however, manpower would simply be reposited in readiness for a border war.

2. Improvement in relations with Algeria.

Comment: Were it perceived that there was little chance of direct conflict with Algeria, and were this change in circumstances accompanied by an end of the Polisario rebellion, Morocco could reasonably conclude that there was no reason for maintaining present levels of military manpower.

On the other hand, reductions in force would probably be minor because the military plays a prominant role in national life and in the security of the monarchy. Another factor is the role of the armed forces in providing employment and training to the important rural population in a limited and sluggish economy.

3. Additional low manpower level factors:

- decline in Polisario activity;
- reduction of Algerian support for Polisario;
- reduction of tensions by Algeria.

B. Circumstances calling for full mobilization and expansion of military manpower:

1. Intensification of the Polisario threat.

Comment: Were this scenario to take place, it would probably develop gradually giving ample time for mobilization and training of Moroccan forces. The pool of physically fit manpower is adequate but Morocco would probably have problems in providing support for an enlarged force long before it felt any manpower constraints.

2. War with Algeria.

Comment: Manpower resources are sufficient for Morocco to expand its forces substantially. Morocco now has relatively little in the way of sophisticated weaponry. In a confrontation with Algeria, its problem

--if it had time to address it--would be to train manpower to handle more advanced weaponry, provided it could find a source of supply. Actual numbers of available manpower would probably not be a limiting factor.

CHAPTER V

CONCLUSIONS

V. CONCLUSIONS

The seven determinants of military manpower resources are the same in each of the countries under study. The nature and quality of these differ in every country, however, and thus their interaction produces different results. This interaction can be replicated in the model described in section II.

It may be useful here to offer some conclusions about these determinants of military manpower based on comparative analysis of their nature and operation in the countries being studied.

Government Policies

A government's perception of threats and its definition of national purposes determines what sort of armed forces it shall create and maintain.

The perception of external threat is usually heavily influenced by the sense of the national role or by attempts to assume a leadership role in regional affairs, which usually means a strong military force. Decisions with respect to military force levels are also often influenced by the perception of internal threats and the belief that a strong military force can be used to protect the regime that creates it.

Another reason for building up armed forces is the belief that an effective military force--generally a modern force--contributes to national morale and prestige. For these reasons military forces are not necessarily reduced when threats diminish. Reductions in force are usually the result of economic stringencies or overriding priorities.

Algeria is exceptional in that its army has played a largely political and developmental role, reflecting its part in the establishment of the state and the priority given to industrial development. Saudi Arabia is also exceptional in that it has two armies, one for domestic security purposes and the other not for fighting but as a symbol of the nation's intent to modernize and to play an area role commensurate with its position of religious leadership and its wealth.

Population Base

The larger the population the larger the military manpower pool, but economic resources determine the upward limits of a useful military force. None of the nations studied except Israel, Iran, Iraq, and possibly Jordan is near the point of mobilizing all available physically fit manpower. In other words, constraints other than available manpower determine the size of the military forces in the countries being studied. Among theses are the relationships of efficiency to scale. Developing countries can build up forces too large for them to support and manage.

Womanpower is not now a significant factor in force manning, nor does it appear likely to be over the next two decades, unless the process of modernization speeds up far more than seems likely. Even in Israel, which has a substantial number of women in its armed forces, women have been largely removed from the combat roles to which they were once assigned.

Civilian Human Capital Development Programs

These programs are very important in raising the quality of manpower and thus the quality of a military force, but their affects are long-term. One of the reasons for the relatively high quality of military manpower in Egypt is that Human Capital Development Programs are long established. In Saudi Arabia and Libya, where they are spending much more money per capita on such programs, their effects are not yet significant.

National Human Resources

The quality of the manpower that is inducted into the military forces is determined by the character, health and education of the people. Other important factors are the attitude of the people toward work, their sense of identification with the nation, and their attitude toward military service. It cannot be said that either traditional or modernizing societies produce better candidates for military service. Both produce people who are military misfits. Countries like Morocco and Jordan have a strong military tradition and produce good fighting men, but they often lack the skills that only a modernizing society teaches.

Civilian Versus Military Opportunities

Countries which offer few opportunities in civilian life usually find it easy to offer inducements to join the military. Most of these do not need to resort to conscription to man their armed forces. Countries with a prosperous economy and many opportunities in civilian life usually have to conscript. A relatively poor country like Egypt, however, which does not have a strong military tradition does have to make military service obligatory.

Military Training

Most of the countries under study must assume that they need provide training for their enlisted men from the ground up. Israel is not entirely exceptional in this regard. It uses its Army as a means of training and nationalizing new immigrants. All the countries studied provide training for officers, though those with educational facilities in such fields of importance to the military as engineering and medicine can rely on non-military education to produce the men it needs.

Given the basic quality of the manpower available, military training probably has more to do with the quality of the area's armed forces than anything else.

Probably the most important aspect of military training is that provided senior officers. In many cases the most glaring weaknesses of area forces in combat have been in the performance of their senior leadership.

In many cases, an important element of military training, and in some cases the most important element, has been foreign advisers and trainers. They can raise the quality of the troops they train and, in some cases (though not all), they influence the thinking and the attitudes of those they train.

Military Manpower Resources

All the factors above combine to determine the quality of a given country's military manpower. Some operate mainly as constraints on the accomplishment of the goals of the government policy makers. Some enhance the ultimate value of the basic manpower resource.

Two factors which can enhance or downgrade the quality of a nation's military manpower are national morale and the recent combat experience of the military. If the leadership has the confidence of the people and if its recent combat experience has been successful and instructive, manpower quality is enhanced. Unpopular leadership and a discouraged and inexperienced military performs less well than the determinants of manpower quality would normally indicate.

APPENDIX:

Population Projections

NOTE

For the ten countries under study, the tables which follow project through the year 2003 population levels by segments of particular importance for the consideration of future manpower requirements. These data, extrapolated from statistics gathered while preparing the project, represent the available labor pool that would in turn be transformed by education, civilian sector opportunities, training, government policies, and other model components (see Chapter II) into military human capital resources. Derivation of these figures simulates a partial execution of the projection model through the stage of available working age and military-eligible population.

These figures may later be entered into an enhanced working model for the generation of military manpower projections.

Endnotes describe the sources and calculations of the data.

ALGERIA

	1981	1983	1988	1993	1998	2003
Population (millions) at current growth rate[1-2]	19.6	20.92 20.70	24.61 24.10	28.94 28.07	34.05 32.69	40.05 38.07
Population (millions) at projected growth rate[3]	19.6	21.04	25.10	29.96	35.76	42.67
Population by age groups:						
0-14 yrs.[4]	9.27	9.95	11.87	14.17	16.91	20.18
15-19 yrs.[5]	2.21	2.37	2.83	3.37	4.03	4.80
20-24 yrs.[5]						
25-49 yrs.[5]						
Female population[6]	9.90	10.62	12.68	15.13	18.05	21.55
Military age population (male)[7]		4.39	5.24	6.25	7.46	8.90
Population fit for service		2.71	3.23	3.86	4.61	5.50
Reach military age annually		.22	.26	.31	.37	.45
Female population of military age[8]	4.30	4.62	5.51	6.58	7.85	9.37
Enrolled in secondary school (thousands)[9]	1079.96	1159.12	1383.33	1650.92	1970.26	2351.38
Females enrolled in secondary school (thousands)	417.48	448.08	534.75	638.19	761.64	908.97
Enrolled in third-level school (thousands)	76.44	82.04	97.91	116.85	139.46	166.43
Females enrolled in third-level school (thousands)	19.6	21.04	25.10	29.96	35.76	42.62

EGYPT

	1981	1983	1988	1993	1998	2003
Population (millions) at current growth rate[1-2]	43.3	45.49 45.85	51.48 52.63	58.25 60.42	65.91 69.37	74.57 79.64
Population (millions) at projected growth rate[3]	43.3	45.14	50.08	55.56	61.65	68.40
Population by age groups:						
0-14 yrs.[4]	17.22	17.95	19.91	22.09	24.51	27.20
15-19 yrs.	4.62	4.82	5.34	5.93	6.58	7.30
20-24 yrs.[5]	3.64	3.80	4.22	4.68	5.19	5.76
25-49 yrs.	12.15	12.66	14.05	15.59	17.30	19.19
Female population[6]	21.67	22.59	25.06	27.80	30.85	34.73
Military age population (male)[7]		11.38	12.63	13.74	14.84	16.47
Population fit for service		7.42	8.23	9.13	10.13	11.24
Reach military age annually		.47	.52	.58	.64	.71
Female population of military age[8]	10.47	10.92	12.11	13.44	14.91	16.54
Enrolled in secondary school (thousands)[9]	3005.02	3132.56	3475.58	3856.17	4278.44	4746.94
Females enrolled in secondary school (thousands)	1108.48	1155.52	1282.06	1422.45	1578.21	1751.03
Enrolled in third-level school (thousands)	528.26	550.68	610.98	677.88	752.12	834.48
Females enrolled in third-level school (thousands)	164.54	171.52	190.30	211.14	234.26	259.92

IRAN

	1981	1983	1988	1993	1998	2003
Population (millions)	40.1	42.62	49.64	57.83	67.37	78.48
at current growth rate[1-2]		42.49	49.50	57.66	67.17	78.25
Population (millions) at projected growth rate[3]	40.1	42.71	49.99	58.52	68.50	80.19
Population by age groups:						
0-14 yrs.[4]	17.79	18.95	22.18	25.96	30.39	35.58
15-19 yrs.	4.25	4.52	5.30	6.20	7.26	8.49
20-24 yrs.[5]	3.34	3.56	4.17	4.88	5.71	6.69
25-49 yrs.	10.11	10.77	12.60	14.75	17.27	20.21
Female population[6]	19.72	21.01	24.59	28.78	33.69	39.44
Military age population (male)[7]		9.78	11.45	13.40	15.69	18.36
Population fit for service		6.01	7.04	8.24	9.64	11.28
Reach military age annually		.42	.49	.58	.67	.79
Female population of military age[8]	8.89	9.47	11.08	12.97	15.18	17.77
Enrolled in secondary school (thousands)[9]	2811.01	2993.79	3504.45	4102.22	4801.94	5621.03
Females enrolled in secondary school (thousands)	1010.52	1076.23	1259.80	1474.69	1726.23	2020.68
Enrolled in third-level school (thousands)	164.41	175.10	204.97	239.93	280.86	328.76
Females enrolled in third-level school (thousands)	52.13	55.52	64.99	76.08	89.05	104.24

IRAQ

	1981	1983	1988	1993	1998	2003
Population (millions) at current growth rate[1-2]	13.5	14.43 14.51	17.06 17.07	20.16 20.08	23.83 23.61	28.17 27.78
Population (millions) at projected growth rate[3]	13.5	14.46	17.18	20.40	24.23	28.78
Population by age groups:						
0-14 yrs.[4]	6.29	6.74	8.00	9.51	11.29	13.41
15-19 yrs.	1.41	1.52	1.80	2.14	2.54	3.02
20-24 yrs.[5]	1.26	1.34	1.60	1.90	2.25	2.68
25-49 yrs.	3.04	3.26	3.87	4.60	5.46	6.49
Female population[6]	6.66	7.14	8.48	10.07	11.96	14.21
Military age population (male)[7]		3.31	3.93	4.67	5.54	6.59
Population fit for service		1.90	2.26	2.68	3.18	3.78
Reach military age annually		.16	.19	.22	.27	.32
Female population of military age[8]	2.96	3.17	3.76	4.47	5.31	6.30
Enrolled in secondary school (thousands)[9]	1066.5	1142.46	1356.88	1611.55	1914.02	2273.26
Females enrolled in secondary school (thousands)	341.55	365.88	434.55	516.10	612.97	728.02
Enrolled in third-level school (thousands)	105.3	112.8	133.97	159.12	188.98	224.45
Females enrolled in third-level school (thousands)	32.4	34.71	41.22	48.96	58.15	69.06

ISRAEL

	1981	1983	1988	1993	1998	2003
Population (millions) at current growth rate[1-2]	4.0	4.21 3.96	4.79 4.29	5.44 4.64	6.19 5.02	7.03 5.44
Population (millions) at projected growth rate[3]	4.0	4.12	4.43	4.70	5.14	5.54
Population by age groups:						
0-14 yrs.[4]	1.33	1.37	1.47	1.59	1.71	1.84
15-19 yrs.	.45	.46	.50	.54	.58	.62
20-24 yrs.[5]	.34	.35	.38	.41	.44	.47
25-49 yrs.	1.19	1.22	1.32	1.42	1.53	1.65
Female population[6]	2.00	2.06	2.22	2.39	2.58	2.86
Military age population[7]		1.87	2.01	2.17	2.34	2.52
Population fit for service		1.17	1.26	1.36	1.46	1.58
Reach military age annually		.07	.08	.08	.09	.09
Female population of military age[8]	.93	.96	1.04	1.12	1.20	1.29
Enrolled in secondary school (thousands)[9]	198.8	204.81	220.64	237.69	256.06	275.85
Females enrolled in secondary school (thousands)	104.8	107.97	116.31	125.30	134.98	145.42
Enrolled in third-level school (thousands)	92.8	95.60	102.99	110.95	119.53	128.76
Females enrolled in third-level school (thousands)[16]	43.6	44.92	48.39	52.13	56.16	60.50

JORDAN

	1981	1983	1988	1993	1998	2003
Population (millions)	3.4	3.64	4.32	5.14	6.10	7.24
at current growth rate[1-2]		3.44	4.05	4.76	5.60	6.58
Population (millions) at projected growth rate[3]	3.4	3.66	4.38	5.26	6.30	7.56
Population by age groups:						
0-14 yrs.[4]	1.58	1.70	2.04	2.44	2.93	3.52
15-19 yrs.	.36	.36	.46	.55	.66	.79
20-24 yrs.[5]	.28	.30	.36	.42	.51	.61
25-49 yrs.	.75	.80	.96	1.15	1.38	1.66
Female population[6]	1.66	1.79	2.14	2.57	3.08	3.69
Military age population (male)[7]		.77	.92	1.11	1.33	1.59
Population fit for service		.55	.66	.79	.95	1.14
Reach military age annually		.04	.05	.06	.07	.08
Female population of military age[8]	.73	.79	.94	1.13	1.36	1.63
Enrolled in secondary school (thousands)[9]	395.08	424.86	509.49	610.98	732.70	878.65
Females enrolled in secondary school (thousands)	173.74	186.83	224.05	268.68	322.21	386.40
Enrolled in third-level school (thousands)	47.6	51.19	61.38	73.61	88.28	105.86
Females enrolled in third-level school (thousands)	20.4	21.94	26.31	31.55	37.83	45.37

LIBYA

	1981	1983	1988	1993	1998	2003
Population (millions) at current growth rate[1-2]	3.1	3.36 3.50	4.11 4.47	5.02 5.70	6.14 7.28	7.50 9.28
Population (millions) at projected growth rate[3]	3.1	3.33	4.00	4.79	5.75	6.89
Population by age groups:						
0-14 yrs.[4]	1.45	1.56	1.87	2.24	2.68	3.23
15-19 yrs.	.29	.31	.37	.45	.54	.64
20-24 yrs.[5]	.22	.24	.29	.35	.42	.50
25-49 yrs.	.80	.96	1.15	1.38	1.66	1.99
Female population[6]	1.48	1.59	1.91	2.29	2.75	3.29
Military age population (male)[7]		.85	1.02	1.22	1.46	1.76
Population fit for service		.50	.60	.72	.86	1.03
Reach military age annually		.04	.05	.06	.07	.08
Female population of military age[8]	.64	.69	.82	.99	1.18	1.42
Enrolled in secondary school (thousands)[9]	308.76	332.03	398.17	477.49	572.61	686.68
Females enrolled in secondary school (thousands)	132.37	142.35	170.70	204.71	245.49	294.39
Enrolled in third-level school (thousands)	16.74	18.00	21.59	25.89	31.04	37.23
Females enrolled in third-level school (thousands)	4.03	4.33	5.20	6.23	7.47	8.96

MOROCCO

	1981	1983	1988	1993	1998	2003
Population (millions) at current growth rate[1-2]	20.9	22.22 22.89	25.88 26.41	30.15 30.46	35.12 35.15	40.91 40.54
Population (millions) at projected growth rate[3]	20.9	22.39	26.59	31.58	37.51	44.55
Population by age groups:						
0-14 yrs.[4]	9.60	10.29	12.22	14.51	17.24	20.47
15-19 yrs.	2.40	2.57	3.05	3.62	4.31	5.11
20-24 yrs.[5]	1.85	1.98	2.35	2.79	3.32	3.94
25-49 yrs.	5.32	5.70	6.76	8.03	9.54	11.33
Female population[6]	10.26	10.99	13.06	15.51	18.42	21.87
Military age population (male)[7]		5.01	5.95	7.07	8.39	9.97
Population fit for service		3.10	3.68	4.37	5.19	6.17
Reach military age annually		.26	.31	.37	.44	.52
Female population of military age[8]	4.60	4.93	5.85	6.95	8.26	9.80
Enrolled in secondary school (thousands)[9]	819.28	877.63	1042.35	1237.99	1470.34	1746.30
Females enrolled in secondary school (thousands)	303.05	324.63	385.56	457.93	543.88	645.95
Enrolled in third-level school (thousands)	77.33	82.84	98.38	116.85	138.78	164.83
Females enrolled in third-level school (thousands)	18.81	20.15	23.93	28.42	33.76	40.09

SAUDI ARABIA

	1981	1983	1988	1993	1998	2003
Population (millions)	9.3	10.16	12.66	15.77	19.66	24.50
at current growth rate[1-2]		10.44	12.34	14.58	17.24	20.36
Population (millions) at projected growth rate[3]	9.3	9.94	11.75	13.89	16.42	19.40
Population by age groups:						
0-14 yrs.[4]	4.22	4.51	5.33	6.30	7.45	8.80
15-19 yrs.	.93	1.00	1.18	1.39	1.65	1.95
20-24 yrs.[5]						
25-49 yrs.						
Female population[6]	4.66	4.99	5.90	6.97	8.24	9.73
Military age population (male)[7]		2.78	3.28	3.88	4.59	5.42
Population fit for service		1.59	1.88	2.22	2.62	3.10
Reach military age annually		.10	.12	.14	.16	.20
Female population of military age[8]	2.08	2.22	2.63	3.10	3.67	4.34
Enrolled in secondary school (thousands)[9]	395.25	422.58	499.48	590.36	697.78	824.75
Females enrolled in secondary school (thousands)	146.94	157.10	185.69	219.48	259.41	306.61
Enrolled in third-level school (thousands)	63.24	67.61	79.92	94.46	111.64	131.96
Females enrolled in third-level school (thousands)	18.6	19.89	23.5	27.78	32.84	38.81

SYRIA

	1981	1983	1988	1993	1998	2003
Population (millions)	9.3	10.00	11.99	14.38	17.25	20.68
at current growth rate[1-2]		9.74	11.51	13.61	16.08	19.00
Population (millions) at projected growth rate[3]	9.3	10.06	12.24	14.89	18.12	22.04
Population by age groups:						
0-14 yrs.[4]	4.46	4.82	5.86	7.14	8.68	10.56
15-19 yrs.	1.04	1.12	1.36	1.66	2.02	2.46
20-24 yrs.[5]	.84	.91	1.10	1.34	1.63	1.99
25-49 yrs.	2.06	2.23	2.72	3.30	4.02	4.89
Female population[6]	4.61	4.98	6.06	7.38	8.97	10.92
Military age population (male)[7]		2.14	2.60	3.17	3.85	4.69
Population fit for service		1.20	1.46	1.78	2.16	2.63
Reach military age annually		.10	.12	.15	.18	.22
Female population of military age[8]	1.95	2.11	2.56	3.12	3.80	4.62
Enrolled in secondary school (thousands)[9]	653.79	707.14	860.34	1046.74	1273.52	1549.43
Females enrolled in secondary school (thousands)	239.94	259.52	315.74	384.15	467.38	568.64
Enrolled in third-level school (thousands)	127.41	137.81	167.66	203.99	248.18	301.95
Females enrolled in third-level school (thousands)	37.2	40.24	48.95	59.56	72.46	88.16

ENDNOTES

1 All of the endnotes refer to each of the cases. The Row 1 projections use the World Bank World Tables estimates of population in 1981 and their growth rate for the years 1970-1981.

2 The Row 2 projections use the CIA Factbook estimates of population in 1983 and their current estimate of the growth rate.

3 The third row begins from World Bank estimates of population in 1981 and their forecasted growth rates for the years 1980-2000.

4 Rows 4 and 5 use computed estimates of percent of 1980 population in age groups 0-14 and 15-19 from The Yearbook of Third World. This percent is applied to the World Bank 1981 population estimates and projected using World Bank 1980-2000 estimates of population growth.

5 Rows 6 and 7 use most recent estimates of percent of population in age groups 20-24 and 25-49 which are corrected for dissimilar years by projecting the population levels backward, using World Bank estimates of annual growth rates between 1970-1981. The percent estimates are corrected from the United Nations Demographic Annual. Growth rates are the World Bank percent 1980-2000 projections.

6 Percent female population was computed from estimates in The Yearbook of the Third World, applied to the World Bank population estimates, and projected using World Bank expected population growth rate for 1980-2000.

7 The number of military-aged males (and females in Israel), the number fit to serve, and the number reaching military age annually are all CIA estimates. Projections use the World Bank estimates of population growth for 1980-2000.

8 The percent female population of military-age was derived from The Yearbook of the Third World, applied to the World Bank population estimates, and projections used World Bank 1980-2000 estimates.

9 School enrollment data came from the UNESCO Annual, using the most recent estimates corrected for dissimilar years by projecting population levels backward using World Bank estimates of annual growth rates between 1970-1981. Following computation of percent enrolled for 1981, the data were projected to 2003 using the World Bank growth rate estimate for 1980-2000.